Five Decades of HIPPY Research: A Preliminary Global Meta-Analysis and Review of Significant Outcomes

Final Report

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HIPPY International

המכון לחקר הטיפוח בחינוך
The NCJW Research Institute for Innovation in Education

This document was produced by Keith Goldstein, who is a post-doctoral researcher at the Hebrew University of Jerusalem, Israel (HUJI) and conducts studies under the auspices of the NCJW Research Institute for Innovation in Education (RIFIE). RIFIE is affiliated with HUJI. Since 1969, RIFIE has coordinated and conducted research about educational programs in Israel and beyond that aim to bridge social gaps. The ETGAR program, the Hebrew acronym for HIPPY, is one of the original programs developed at the institute in 1969. The author has conducted over twenty research projects for RIFIE since 2009, including several evaluations of the ETGAR program and other early childhood interventions coordinated by the institute. For more information visit http://innovate.educate.huji.ac.il/en

HIPPY International, under the leadership of its director Miriam Westheimer, provided consultations and valuable assistance in formulating this review. HIPPY International is a global network of home-visiting programs that empower parents to prepare their children for school. HIPPY programs around the world follow the HIPPY International model, which is designed to assist parents with children aged three to five years old. HIPPY programs exist in Argentina, Australia, Austria, Canada, Germany, Israel, Italy, Liberia, New Zealand, South Africa, and the USA. HIPPY-inspired programs also operate in Denmark, Finland, the Netherlands, Sweden, and Turkey. For more information visit http://hippy-international.org/

This research was sponsored by the Brotherhood of St Laurence (BSL), which was founded in 1930 and is based in Melbourne, Australia. BSL administers HIPPY Australia and has conducted numerous research projects that evaluate the program in Australia and beyond. The organization assists disadvantaged communities throughout Australia, provides training for service development, conducts research, and advocates for evidence-based policies. The institute's vision is to create an Australia free of poverty, by creating programs that support disadvantaged communities and individuals. For more information visit www.bsl.org.au. HIPPY in Australia is funded by the Australian Government through the Department of Social Services.

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Abbreviations

BSL	Brotherhood of St Laurence
NCJW	The National Council of Jewish Women
RIFIE	The NCJW Research Institute for Innovation in Education
HIPPY	The Home Instruction/Interaction For Parents of/and Preschool Youngsters
HUJI	The Hebrew University of Jerusalem, Israel

Questions about this document, the literature review project, and the online archive can be sent to the lead author of this document: Dr. Keith Goldstein, keith.goldstein@mail.huji.ac.il, NCJW Research Institute for Innovation in Education, The Hebrew University of Jerusalem

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Executive Summary

Project Overview

During the course of a six month research project, we created an online archive (www.hippyresearch.org) that summarizes 60 research documents about the HIPPY program and 24 research documents about other early childhood education and care interventions with home-visiting components that measured school readiness outcomes. We also identified 128 English language peer-reviewed publications that discuss HIPPY, as well as over 700 additional documents about the program, many of which will be summarized through our online archive at a later date. The online archive is an ongoing research initiative that enables HIPPY researchers around the planet to contribute their own studies and conduct their own analyses.

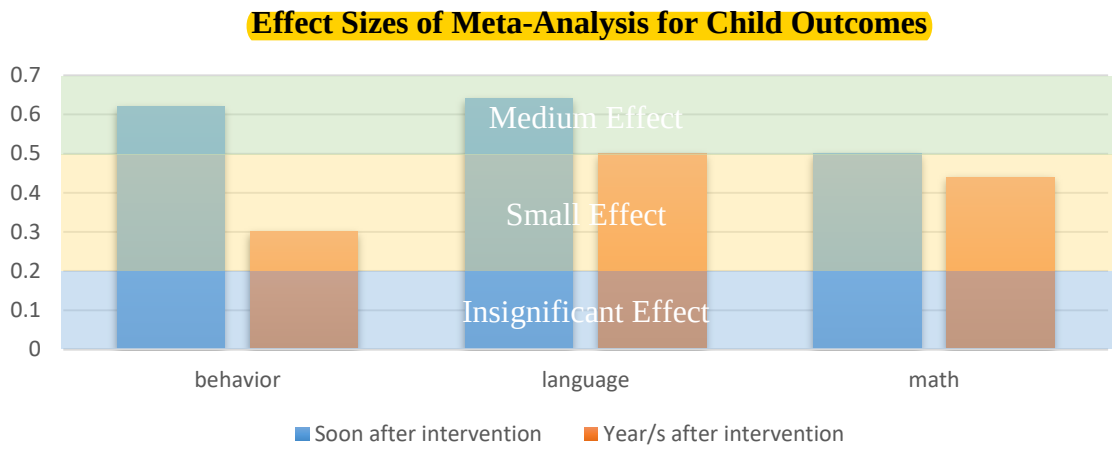
Utilizing research studies about HIPPY International that included an experimental design with a comparison and program group, we conducted a meta-analysis that revealed significant outcomes of HIPPY research from around the world. Meta-analysis is a statistical method often used in medical research that takes into account the reliability of each study, limiting the influence of small obscure results. Administrators of HIPPY International should cite the examples provided when asked for evidence of the program's proven impact. Outcomes were divided into three categories with four subcategories (a,b,c,d):

1) Children's a) behavior and b) cognitive skills in c) math and d) language soon after the intervention (11 studies)
2) Children's a) behavior and b) cognitive skills in c) math and d) language at least one year after the intervention (12 studies)
3) Parents' self-esteem and behavioral outcomes (12 studies)

Key Findings

The meta-analysis collectively measured the effect sizes from 26 studies about HIPPY from 7 countries, highlighting the most positive outcomes. These studies indicate that HIPPY has a weighted effect size of d=.54 on children outcomes soon after the intervention, meaning the intervention has a significant impact (medium effect size). That impact is still observable as the child advances through school. The effect size decreases slightly to d=.44 as the child grows older, which is still a significant impact. Effects were examined for three categories of skills (behavior, language, and math) that are often examined as intended outcomes of the intervention. The effects of the intervention on language and behavior were profound soon after the intervention. The impact of the program on math skills remains consistent years after the intervention. Furthermore, HIPPY also improves parents' self-esteem and behaviors, such as reading to their child and reducing abuse.

As shown in the graph below, HIPPY has a medium to large effect soon after the intervention for language (d=.64) and behaviors (d=.62). The impact on behaviors decreases years after the intervention (d=.30), but the measures of behaviors soon after the intervention (pays attention, gets along with others) are not directly comparable to the measures of behavior years after the intervention (school attendance, attending college, owning a credit card). The impact on math skills remains extremely consistent soon after (d=.50) and years after (d=.44) the intervention, an outcome that is more objectively comparable over time.



Results are summarized with examples of more recent studies that prove each outcome:

1) Child outcomes soon after intervention were shown for reading and language skills (e.g. Brown and Lee 2015), math skills (e.g. Van Tuijl and Leseman 2004), and relations with peers (e.g. Barnett 2012).
2) Child outcomes that are long-term include higher rates of school attendance (e.g. Brown 2012), college attendance (e.g. Kagitcibasi et al. 2009), transference of program benefits to younger siblings (e.g. Chatterji 2014), and math achievement (e.g. Nievar et al. 2011).
3) Parent outcomes soon after intervention were proven in regards to improvement in the parent-child relationship (e.g. Palladino 2015), the parents' relations with the school, other family members and the community (e.g. Johnson et al. 2012), and the parent's self-esteem, knowledge, and confidence in parenting (e.g. Necoechea 2007).

Finally, we do not want to discount the importance of numerous qualitative studies and additional quantitative studies that adopted alternative analyses from standard program-comparison group models. These studies also provide valuable insight on outcomes that were not visible in experiment-type studies and deserve consideration. This literature review thus concludes with a contextual analysis that included an additional 18 studies about HIPPY (e.g. Nailon and Beswick 2014, Wasserman 2006) for three hypotheses derived from research questions, themes, and summaries: 1) HIPPY works in combination with other interventions, such as center-based preschools, 2) HIPPY utilizes evidence-based research to adapt to each community's needs, and 3) HIPPY is cost-effective and has significant impact.

Ongoing Data Collection

Decades of well-constructed research projects have shown how HIPPY is having a substantial impact on the lives of families and communities at large. However, as regards all evidence-based interventions, our work is not complete. Further studies were identified that are not included (e.g. Black and Powell 2004, Brown and Lee 2014, Dosmukhambetova and Ridling 2016), and will be utilized in the ongoing meta-analysis. A number of different standardized tests were used to measure children's cognitive skills (e.g. the Peabody Picture Vocabulary Test, The Gumpel Readiness Inventory, and the Texas Assessment of Knowledge and Skills). Future studies should emphasize the use of common tests whenever possible. Likewise, a variety of statistical tests were used to measure the significance of outcomes. All studies that use an experimental design should report the following three measurements, which will enable us to continue this meta-analysis: 1) means, 2) standard deviations, and 3) sample sizes. We are encouraging students and professional researchers around the world to assist us in this ongoing meta-analysis archive project.

Introduction

The following document outlines a comprehensive review of proven outcomes generated from scientific research about HIPPY programs across the globe. This document includes 1) a meta-analysis of quantitative impact studies that evaluated national HIPPY programs, 2) contextual examples of findings from specific studies that revolve around eight themes found to be most prevalent within HIPPY research, and 3) a brief discussion of ongoing research through our online archive (www.hippyresearch.org) where the studies and data discussed in this research are documented and more studies are being inputted. The current research is particularly important for global collaboration towards improving at-home interventions and promoting evidence-based policy improvement. Hence, this document presents only a small picture of a growing collection of studies about HIPPY and similar interventions.

This document is intended to assist anyone who wants to learn about empirical studies that document HIPPY's proven impact. The meta-analysis examines statistically significant outcomes identified in quantitative studies of HIPPY that utilized a program and comparison group, as well as qualities of the research. The contextual examples incorporate quantitative studies that may or may not involve an experiment, as well as qualitative research and other documents that provide empirical evidence for significant program outcomes.

Eight-four research documents have been summarized in the online database to date. Sixty of those documents examined HIPPY, while the remaining twenty-four examined other early childhood education and care programs or methods that were deemed relevant to HIPPY International. Twenty-six of those documents represented unique quantitative impact studies of HIPPY that included comparison and program groups, which form the basis for the meta-analysis. Five of these studies (Baker et al. 1998, Kagitcibasi et al. 2001, 2009, Nievar et al. 2011, Necoecea 2007) included random samples, two of which could be classified as true randomized control trials (Baker et al. 1998, Necoecea 2007).

This archive is part of an ongoing research study, which allows researchers to both input their own research and perform their own unique analyses that will further build the evidence bases of HIPPY research. We provide at the end of this document a discussion about the ongoing use of this online archive, both for researchers who will enter additional summaries of research and researchers who want to conduct their own analyses of this data. In total approximately 173 peer reviewed publications (128 in English) and over 800 documents (institute reports, presentations, etc.) were identified that discuss HIPPY. The current analysis does not encompass all empirical research about the program. Additional studies were also identified (e.g. Black and Powell 2004, Brown and Lee 2014, Dosmukhambetova and Ridling 2016) that included comparison and program groups, but they have yet to be summarized in our archive. Research about the program is obviously ongoing, and we stress that this meta-analysis presents a preliminary picture about some of the research findings that have been discovered to date. An immense amount of empirical research spanning over half a century documents the impact HIPPY has had around the world, and we plan to continue this literature review research by collecting and disseminating evidence that documents HIPPY's evolution and achievements.

HIPPY's early research history

Today's HIPPY International Program was derived from the ETGAR Program that was started in Israel in the 1968-1969 school year. The intervention exists there under the same name to the present day. In Hebrew ETGAR אתג"ר is an abbreviation for Mothers' Programing for Early Childhood אֵמהוּת תיכנותית לגיל הרך, but the word ETGAR also means challenge. The NCJW Research Institute for Innovation in Education (RIFIE) was simultaneously founded with the ETGAR program and still houses the program today. HIPPY is referenced in the original 1971 documents (Lombard 1971a,b). Initially, the program received a five year grant, part of which Prof. Lombard used to create the first evaluations (1971a, 1973) that compared children from a poor neighborhood in Tel Aviv whose parents were recipients of home-visiting lessons to other children that received the same lessons in a preschool with certified teachers. Owing to the positive results of this first experimental research, the program was able to expand.

Prof. Lombard was motivated by the high demand for integrative preschool education in Israel (Lombard 1982). Government ministries in Israel embarked on an ambitious task of providing free early childhood education to all citizens but grappled with difficulties recruiting certified teachers and catering to increasing numbers of disadvantaged families, many of whom were recent immigrants and local Arab families (ibid: 1971b). Her view at the time was that dramatic changes to preschool education were needed to assist these at-risk families: "…while preschool education in Israel is extensive and has a relatively long history, its scope and traditions act to deter innovation and change. The pressing needs of the disadvantaged may, in the next few y ears, create enough force to bring about long-awaited changes." (Lombard 1971b: 86). Thanks to Prof. Lombard's extensive evaluations, the Israeli Home Instruction Program for Preschool Youngsters was adopted by the Israeli Ministry of Education and in the early 1980s exported around the world.

Since then, the program has expanded to all corners of the planet as an evidence-based model. Besides RIFIE, HIPPY research centers today include the Brotherhood of St Laurence in Australia, the Great Potentials Foundation in New Zealand, and the National Research and Evaluation Center for HIPPY USA. Unique HIPPY research models have been applied everywhere from Aboriginal HIPPY Canada (AHC) that has been implementing culturally-adapted, home-visiting programs for indigenous communities to The Friends of Liberia (FOL) that has implemented a HIPPY model that promotes family literacy in conjunction with the WE-CARE Foundation (Mertz 2016). HIPPY in Australia is offered within a Prime Provider model of delivery, which provides HIPPY as one of a suite of social services and facilitates referrals for specialized interventions. HIPPY is highly responsive to local cultural needs in its design and deployment, and each country implements the HIPPY model in ways that are often unique. However, the core model is quite similar across countries.

Following in the footsteps of Prof. Lombard, researchers have conducted rigorous evaluations of these programs, which enable them to improve their mission to reduce social gaps. Two types of evidence-based research about the program are generally conducted to uncover child outcomes: studies of the program soon after intervention, and studies that examine longitudinally whether the intervention has long-term impact. Additional research

also examines outcomes for parents, as well as outcomes about the administration and home-visitors.

Goals of the intervention

While the HIPPY model has a few variants in different countries and within specific communities, all HIPPY programs around the world follow an identical plan to promote parents as their children's first teacher by means of home-visiting overseen by a paraprofessional who provides the parent with structured curriculum and guidance. The program is designed as a weekly two-year home-visiting intervention for parents from disadvantaged backgrounds with children aged three to five years old. The goal of the intervention is to promote school readiness, thereby reducing gaps in education and attainment.

The intervention is not conducted by certified teachers or health care professionals, nor do the home-visitors instruct the children directly. Rather, paraprofessionals provide the parents with storybooks and other resources, and they train them how to use these materials with their children. The use of role play with structured curriculum is considered one of the most important features of program delivery. "The emphasis is on action rather than talk; it is interactive, experiential learning that is down to earth and concrete…" (Lombard 1994:18). Often home-visitors are mothers who previously were participants in the program. Training local members of the community to become home-visitors greatly reduces the cost of the intervention while increasing the availability of staff, thereby exponentially improving the intervention's impact on the children. In contrast, other home-visiting interventions and center-based programs conducted by professionals may increase costs and limit the availability of services. HIPPY often works in conjunction with other interventions. It is not intended to be a replacement for center-based preschools, but rather it presents an added-on effect (Council of Community Pediatrics 2009).

Goals of this study

This literature review study was conducted to support HIPPY programs around the world. The goal is to assist researchers and administrators who require information that will allow them to evaluate, improve, and expand the program. Likewise, this study is intended to assist donors, policy makers and educators who seek to learn more about the positive outcomes of HIPPY around the world and how they were investigated. The website enables researchers to continue the literature review research, by allowing them to input their own summaries of prior, current or future research on HIPPY affiliated programs, as well as upload pictures or any type of media (graphs, pictures, etc.) that they would like to share. This innovation gives the literature review an ongoing role beyond the current document. Finally, the goal of this research is to facilitate collaborative global research both specifically about HIPPY International and generally about parent-focused home-visiting interventions for school readiness. Our eventual goal, which has yet to be achieved, is to develop a multinational questionnaire for parents and HIPPY graduates, which would incorporate qualitative storytelling and quantitative feedback

about the program. Our goal is to assist countries to formalize survey evaluation and early childhood research. Future projects may incorporate software for child assessment and learning tools.

Structure of this report

We begin this report with an overview of the methods that were employed to gather and analyze prior research. First, we explain the way the bibliography searches were conducted, followed by a brief discussion of the online form that was used to collect summaries of the bibliographical entries. An explanation is also provided about the methods used to construct the meta-analyses and contextual analyses used to evaluate the form data. Finally, we present the actual results of the meta-analyses and contextual analyses, which include a discussion of the results and what they signify for HIPPY International. The paper ends with concluding remarks about limitations of the current study, as well as details of the ongoing data entry to the online form and our plans for future ongoing collaboration. The appendix includes tables that list the questions used to create the meta-analysis, the bibliographies, and statistics from the online form.

Methods

This literature review utilized several online resources that enabled us to identify, catalogue and examine a comprehensive sample of HIPPY research studies. We also developed our own online tool (www.hippyresearch.org) to facilitate the collection of data and enable this research to be accessed and continued by other scholars. Utilizing the literature collected, we set out to create two analyses of the data: a quantitative meta-analysis that aggregates significant outcomes from prior studies with experimental designs and a qualitative review of contextual examples from the literature. This section explains the way that each phase of the literature review was conducted.

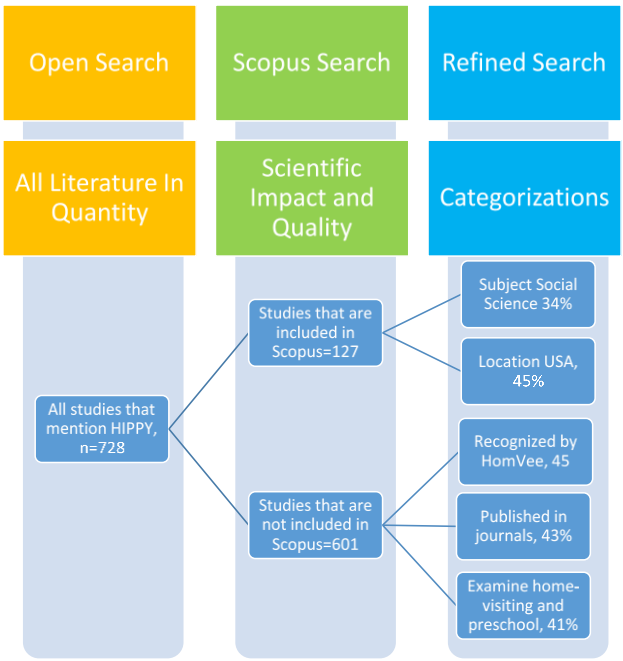
The Bibliography Search

The bibliography is a descriptive catalogue of articles that reference HIPPY. Our model for identifying research to be included in the bibliography had a three-phase data mining design: 1) Open Search, 2) Scopus Search, and 3) Refined Search[1]. The Open Search is a list of all literature that cites HIPPY. We employed an exploratory framework that utilizes online public databases, such as Google Scholar. The Scopus Search cross-referenced results from the Open Search with the Scopus archive of peer-reviewed publications. The Refined Search examined keywords, references, and other information included in HIPPY literature to locate additional

[1] The Scopus and Open Search archives are stored in an online Mendeley folder. Please contact the author for access. The Refined Search archive is available online at hippyresearch.org.

research. Studies for the meta-analysis were chosen from the refined search based on whether they took place in the past twenty years and incorporated a quantitative analysis of effect sizes. Metrics from the refined search included in the automated analysis explain the impact that HIPPY is having, themes of research, disciplines in which HIPPY researchers operate, gaps in research that need to be filled, and numerous other questions.

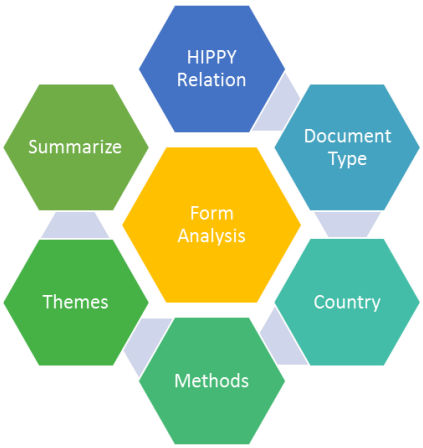
Our Model for the Bibliography Search



The Form

The form is an online questionnaire (http://hippyresearch.org/form) for entering summaries for each of the references identified in the bibliography. A summary of the questions that were included in the form is available in Appendix F. The full codebook that includes logic and answer scales is available in Appendix G. By use of this form, we examine the themes, methods, and other attributes of the research. We want to know how studies in different settings adopted different themes and methods, demonstrated evidenced-based outcomes, and whether there were gaps in the research that need to be filled. The researcher enters optimized descriptive data for literature obtained in the bibliography searches into the form, which is based on the following six general categories of questions (HIPPY Relation, Document Type, Country, Methods, Themes, and Summarize). Each category is based on a subset of several questions.

Model for Form Analysis



The Meta-Analysis

The sampling frame of the meta-analysis was to include quantitative studies for which information was available to extract the mean, number, and standard deviation for a comparison and program group. Out of the sixty studies that were reviewed about HIPPY, a final list of twenty-six studies qualified for inclusion in the meta-analysis. A complete list of the studies, variables, and values used is available in Appendices A-D. The actual analysis is based on two multi-part questions in the form: 1) Did this study reveal any significant positive outcomes of the intervention? And 2) Did this study reveal any significant negative outcomes of the intervention? Each question was limited to five variables. If more than five variables were presented, variables were chosen to represent a variety of outcomes (parent attitudes and behaviors and child cognitive skills and behaviors). For the meta-analysis we examined only statistically significant outcomes identified in quantitative studies of HIPPY that utilized a program and comparison group, as well as themes of the research. Several studies reported minor significance with probability values of .05 to .10. However, our analysis excluded any coefficients that did not have a probability of less than 5% occurring by chance. The continuous random effects model of child outcomes utilized twenty studies from which sufficient data could be extracted. Six of those studies only included valid data on parents. Effect sizes were computed using the following standard equation for Cohen's d:

$$d = \frac{(\bar{Y}_{\text{HIPPY}} - \bar{Y}_{\text{CONTROL}})}{\sqrt{((\text{SD}^2_{\text{HIPPY}} - \text{SD}^2_{\text{CONTROL}})/2)}}$$

Additional equations were used to convert from R, F, T, and odds ratios when d was not reported. Mean differences were used to compare groups and were standardized to a scale of 0 to 1. In numerous cases standard deviations were imputed based on existent data. For example, often the effect sizes were reported, along with the means and the n, which enabled an imputation of standard deviation. Pretest differences were used when the original samples were statistically different. Some studies used age norms from external tests in addition to or in place of a control group. In several cases, as noted in the appendix, the effect sizes of our

meta-analysis differ slightly from the effect sizes that were noted in the original publication. This occurs due to either standardized mean difference (SMD) bias assumptions or the use of rounded numbers.

In order to be consistent, all effect sizes were recalculated. Recalculating the effect sizes enabled us to estimate confidence intervals, which are necessary to conduct a meta-analysis. The meta-analysis was computed using the OpenMeta Software, created by the Center for Evidence Synthesis at Brown University. This software is a graphical interface powered by the R-based metafor package. Results were calculated based on five binomial covariates: 1) child/parent, 2) at the time of intervention, 3) math skills, 4) language skills, and 5) child behavior. Statistical conversions of effect sizes were calculated with formulas in Microsoft Excel.

Contextual Analysis

The contextual analysis includes qualitative information about research studies that could not be easily quantified. This analysis makes use of all literature that was reviewed in the form, although only 18 pieces of literature are cited. The contextual analysis was made using these four multi-part form fields: 1) five main research questions that each study asks; 2) twenty-five keywords that describe the themes of each study, 3) qualitative summaries about each study's methods and findings, and 4) qualitative summaries about the most positive outcomes from each study. Three hypothesized themes were deduced from the research questions and keywords: 1) HIPPY works in combination with other interventions, such as center-based preschools, 2) HIPPY utilizes evidence-based research to adapt to each community's needs, and 3) HIPPY is cost-effective and has significant impact. The choice of these themes was based on inductive logic, meaning based on the evidence presented (the qualitative summaries) these hypotheses seem probable.

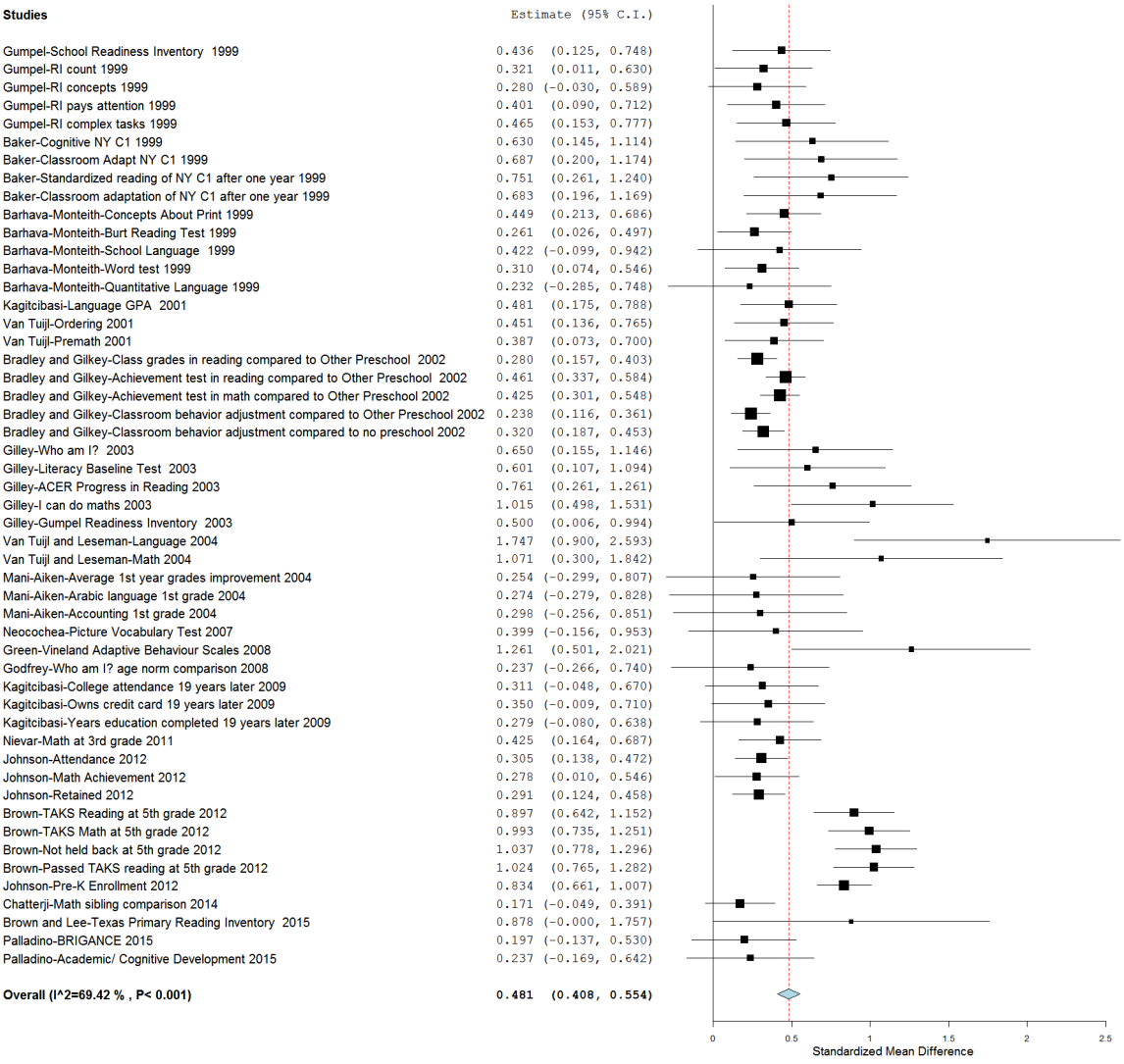
Meta-Analysis Results

Child Outcomes

The meta-analysis is a statistical test that examines the aggregated impact of the HIPPY program on children in studies with a control group. Additional results examining the impact of the program on parents are discussed in a separate meta-analysis that averages the results. Almost an equal number of quantitative studies with comparison group designs were found that examine children's cognitive skills and behavior soon after intervention (11) and a year or years later (12). Studies occasionally examined both outcomes at the time of intervention and years later in the same document (e.g. Baker et al. 1998, Johnson et al. 2012). Relations of child outcomes with variables such as attendance are discussed in the following section on contextual examples. The following meta-analysis only focuses on studies that examined child outcome variables, beginning with total effect the program has on children, and followed by the results soon after and year/s after the intervention.

Below is a list of the actual meta-analysis, which shows each study's impact. The results in the first column show the author, followed by the test, and the year of publication. The statistical results in the right hand columns show the effect size followed by the confidence intervals. The total effect size from fifty-one tests amounted to an effect size of .481 (Cohen's d). The 95% confidence interval of that effect size is .408 to .554. These results provide clear evidence that HIPPY can have a consistent medium-level impact. The list of studies included in the meta-analysis provide examples demonstrating the proven impact of the program.

Graph of all 51 Measures in the Child Outcomes Meta-Analysis



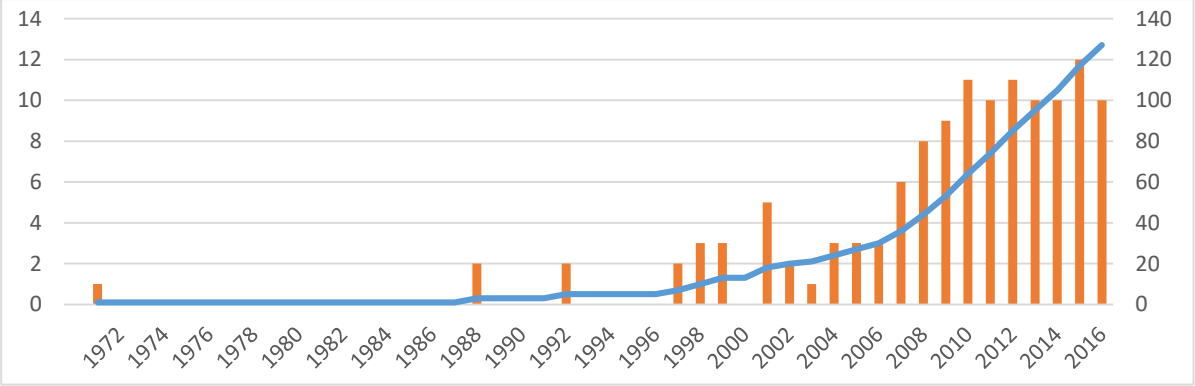
Sample size is always an important aspect of quality research, because smaller samples may not accurately pinpoint the program's impact. Thus, it is interesting to note that all studies with a sample size that included over fifty children documented at least one significant outcome of program participation. Only one significant negative child outcome was identified (Baker et al. 1998), which was not included in the meta-analysis. This study included evaluations of two cohorts immediately after finishing the program and a year later. Results showed positive outcomes in the first cohort at both periods in time. However, the HIPPY group of the second cohort showed less improvement in standardized achievement than the

control group immediately after completion of the program (d=-.63). This negative impact of the intervention in the first Arkansas cohort disintegrated at the follow up one year later of the same children (d=-.07). As a RCT, this Baker et al. study is frequently cited as positive evidence for the impact of the program. Fidelity and poor attendance are often cited as reasons for HIPPY not having an impact, a hypothesis that Baker and colleagues also suggest as the potential reason for this singular negative result.

On the other hand, we identified hundreds of significant positive outcomes, a few of which we analyze in this meta-analysis. Critiques of sampling and significance tests employed in these various individual studies are possible. Although many studies were completed by graduate students (e.g. Neocochea 2007, Green 2008, etc.) or come from institute reports that were not peer-reviewed (e.g. Prairie 2015, Barnett et al. 2012), a large number come from respected peer-reviewed journals. Several quasi-experimental studies utilized stratified random samples for post-hoc comparisons, meaning they inquired retroactively about program participation from the general population (e.g. Kagitcibasi et al. 2009, Nievar et al. 2011). The most effective studies had a smaller number of respondents (Green's 1988 adaptive behavior measure, d=1.26, n=32 and Van Tuijl and Lesseman's 2004 math measure, d=1.74, n=30). On the other hand, larger samples revealed more conservative estimates (Gumpel's RI concepts measure, d=.28, n=162). The benefit of using the meta-analysis is that it takes into account the reliability of the data based on the sample size and standard deviation, limiting the influence of small obscure results on the total effect size.

Taking full account of the body of evidence from twenty-six studies combined, there is mounting evidence the HIPPY program has had significant impact on children and parents alike. If the impact results were not robust, implying that the program has little or no effect, we would have discovered more significant negative effects occurring by chance. The fact that only one negative child outcome was identified (the initial test of achievement of the second cohort in Baker et al. 1998), in contrast to hundreds of positive outcomes, indicates very convincing proof exists that these results were not obtained by chance. On a global scale, the HIPPY model does have a proven impact, and the evidence is mounting.

Studies that cite HIPPY in the Scopus Archive by Year (red) and Cumulative (blue)



Does HIPPY have a sleeper effect?

Based on the singular finding by Baker et al. (1998) that one cohort initially tested lower but those differences reduced over time, our hypothesis was that there may be sleeper effects of

participation, and hence studies that examined children soon after the intervention would show less impact than studies that examined children years after the intervention. The results however show that the opposite takes place.

The results of the meta-analysis show that there was a weighted effect size (the aggregated effect size that considers sample size and standard deviation) of .536 for studies that took place right after the intervention. According to Cohen's (1988) classifications, this means that there was an immediate, intermediate (medium) effect of the intervention (.5 to .8). On the other hand, there a slightly smaller effect of the intervention was observed when a study was conducted a year or years later (d=.444). This means that the effect of participation in HIPPY was still present years later, although the effect size was slightly lower than it was soon after the intervention.

The impact of the program is stronger on child outcomes soon after the intervention (Δ d=-.10). The meta-analysis differences are not significant (omnibus p=.22), but a simple t-test that does not account for confidence intervals and sample size does indicate that these results have mild significance (t=2.01, p<.05). We did not have enough data points with common tests to examine the change in impact over a period of time, but it does not appear that there are any significant changes over time. There is a slight but insignificant reduction in HIPPY's impact as the child enters school, but the impact of participating in the program appears to remain steady into adulthood (e.g. Kagitcibasi et al. 2009).

Overall, it does not appear that HIPPY has a sleeper effect. Most of the studies that examine children years later used a post-hoc quasi-experimental design, meaning that they examined the children without the benefit of a pre-test. Post-hoc designs that examine participants years after program completion present certain research limitations. Researchers attempting sustainability studies must expend tremendous efforts to control for demographic differences, fidelity, additional interventions, and a host of other competing influences on a child. For example, Bradley and Gilkey (2002) were worried about the ability to control for additional preschool and interventions soon after the intervention, and hence they examined 3rd and 6th grade children based on three combinations of preschool interventions. HIPPY children outscored the other preschool students, while the expectation was only that HIPPY could be as effective as other preschool programs. The results were not shown to be different for 3rd and 6th graders, indicating that the programs' impact was sustainable. Kagitcibasi and colleagues (2009) examined Turkish participants 19 years later, mimicking earlier research by Lombard (1981) that examined longitudinally Israeli children who were among the original Israeli participants. Participation in the home-visiting interventions as small children correlated with improved measures of adult success, such as college attendance and owning a credit card.

Does HIPPY have more of an influence on certain types of skills?

Further analyses examined whether language, math, cognitive skills or behavior assessments differed significantly. While no significant differences were found between the assessments, certain notable differences were identified that deserve further investigation. The overall effect size on language skills was d=.54, which is slightly larger than the math effect size d=.47. Cognitive skills overall included both math and language skills, as well as tests for which there

was not a clear distinction. HIPPY has an intermediate to large impact soon after the intervention in measures of language (d=.64) and behavior (d=.62).

Effect Sizes of Meta-Analysis, Cohen's d (number of tests)

	a) behavior	b) cognitive	c) math	d) language	**total**
Soon after intervention	.62 (3)	.52 (21)	.50 (6)	.64 (7)	.54 (24)
Year/s after intervention	.30 (6)	.48 (21)	.44 (6)	.50 (10)	.44 (27)
Total	.41 (9)	.50 (42)	.47 (12)	.54 (17)	.48 (51)

Tests of behavior were far fewer in number. Only nine tests were identified overall, and the measures that we classified as behavior years after the intervention (school attendance, attending college, owning a credit card) are often not directly comparable to the measures of behavior that were used soon after the intervention (pays attention, gets along with others). Many of the behavioral measures also appeared to be included in general cognitive skills tests, as authors often reported only the total score without providing specific details. Hence, we emphasize that behavioral skills tests were not always clear cut. Math skills tests, on the other hand, are the most consistent of the measures and were very easy to identify. Therefore, the impact that the program has on math skills in particular remains fairly consistent.

Parent Outcomes

It was not possible to divide parent outcomes into the same clear time frames and categories of outcomes that were identified for children. Sampling conditions varied tremendously for each study, although most studies focused on the period soon after intervention. Outcomes also varied tremendously: self-esteem, the child-parent relationship, the husband-wife relationship, neighborhood belonging, etc. Many studies did not have a comparison group. Therefore, we divided the studies into two types of designs, those with comparison groups and those with pre to post improvement designs. Furthermore, we only used the average effect size rather than computing weighted averages, as was done for children. Eleven studies were identified with quantitative evaluations of impact on HIPPY parents. Additional studies are discussed in the contextual examples that examine the categories of parent outcomes. Studies of parents have smaller sample sizes than those of children. They often utilized qualitative data from interviews and ethnographic research rather than attempting to quantify outcomes. Below, we present the effect size conversions only for the few studies that were comparable in terms of their evaluation methods. More complete details are available in Appendix C.

Only one study found a significant negative outcome for parents (Barnett et al. 2012). This study showed that parents who participated in the program considered their neighborhood less safe after participation. However, alternative interpretations of this result could be offered. Parents who participate in the program recognize how important it is for their children to be nurtured in a safe environment. The neighborhoods did not necessarily become more dangerous, but rather their perception of a safe neighborhood changed after participating in the intervention. This variable was not included in the parent analysis below because of the

lack of normative clarity, meaning that we could not categorize the finding as positive or negative.

Meta-Analysis of Parent Outcomes

			Pre to Post		
study	Variable	d	study	Variable	d
Prairie 2015	Parent's sense of belonging to their local community during the year the child was in 1st grade.	0.45	Palladino 2015	Difference of reading to children	0.36
Prairie 2015	Meetings with the teacher were requested by the parent during the year the child was in 1st grade.	0.54	Palladino 2015	"Talk about nature, scientific discovery experience, or do a science project with your child?"	0.47
Prairie 2015	Meetings with the teacher were to discuss problems with the child in school during the year the child was in 1st grade.	0.41	Johnson et al. 2012	Home involvement of first-year HIPPY mothers in academic-related learning	0.36
Barnett 2012	Neighborhood belonging scale	0.30			
Nievar et al. 2011	Parental Involvement and Efficacy	0.66			
Flores 2008	Arguments about money	0.35			
Flores 2008	Arguments about showing affection between parents	0.70			
Flores 2008	Arguments about religion	0.36			
Flores 2008	Arguments about other women	0.28			
Green 2008	Parent Self-Esteem Inventory	0.47			
Necoechea 2007	Parent involvement (PI) composite score	0.87			
	Average unweighted d	**0.49**		**Average unweighted d**	**0.40**

The results indicate HIPPY has an intermediate (medium) impact on parent outcomes (comparison group, unweighted average, d=.49), similar to the impact HIPPY has on child outcomes (meta-analysis weighted effect, d=.48). There is obviously more variability in parent outcomes: "Physiologically, psychologically, and sociologically, adults are more diverse than children" (Long 1990, p.25). Hence, there is a wider array of questions about parents that can be investigated. Some of the parent outcomes relate specifically to the parent-child relationships, such as the parent involvement score (Necoechea 2007) or meeting with teachers when the child reaches school age (Prairie 2015). These outcomes are considered to be directly related to the school readiness goals of the program. Furthermore, there is a long standing and well-established body of literature showing the strong link between parental participation with school and children's academic outcomes (e.g. Domina 2005, Wilder 2014).

Many parent outcomes that were identified in research studies are not considered part of HIPPY's primary goal of school readiness, such as the ability to improve problems at home.

For example, Kagitcibasi and colleagues (2001) examined physical abuse among fathers and mothers, showing how children who participated in HIPPY were spanked or beaten less. Other researchers also discuss parenting outcomes that are not direct school readiness outcomes, such as neighborhood belonging (Barnett et al. 2012) and harmony of the household. For example, Flores (2008) examined how participation in the program reduced arguments between the mother and father, and her results showed that participation had a dramatic impact on reducing conflicts at home. Qualitative research, which will be discussed in the following section, also emphasize these benefits of participation extend to the family as a whole. Researchers who have examined substance abuse and physical abuse problems have highlighted the difficulties of getting reliable estimates from self-reported questionnaires (Krumpal 2013). Such measures can often be difficult to quantify accurately in a survey, and interviews or field notes may be more reliable data collection tools. In response to the level of disadvantage and amount of complexity that some families who participate in HIPPY experience, the value of qualitative research cannot be overstated.

Many of the studies that examined parenting outcomes with a comparison group that were not included in our meta-analysis encountered biased samples. For example, Van Tuijl and Leseman (2004) used comparison groups to examine Turkish and Moroccan families in the Netherlands, but they discovered that the program and comparison groups had vastly different scores on the pre-survey. Brown (2013) used a comparison group with a cross-sectional design to compare adult and teenage mothers in the USA to show that the intervention closed the gap. She used prior literature to discuss the gap between teenage and adult mothers, but the results would have been more convincing and capable of measuring impact if a pre-survey had been used that measured the same participants to show that there was indeed an improvement. Mani-Aiken's study of Arab families in Israel (2004) showed that families who participated in the program were consistently more disadvantaged. While the results indicated dramatic improvements, the comparison group served as a population norm and not a reference to similar families. Likewise, Barhava-Monteith and colleagues in New Zealand (1999) showed how their intervention group unintentionally represented a more disadvantaged population than the control group. Perhaps owing to voucher payments made to obtain families for a control group, they may have motivated extremely disadvantaged families to participate who were worse off than the program participants.

The limitations discussed above should not be interpreted as critiques of these research projects or HIPPY parent research in general. Hindsight bias allows us to make evaluations based on information the researchers were not privy to at the time, and we learned of these limitations primarily from the authors' own discussion of limitations. Furthermore, there exist legitimate reasons to consider that many of the sampling issues can never be eliminated. Indeed, problems with conducting outcomes research with at-risk parent populations are well documented in numerous studies of other interventions besides HIPPY (Hebbeler and Gerlach-Downie 2002, Bialeschki and Conn 2011). Complications exist obtaining comparable samples that are often out of the hands of researchers. Azzi-Lessing (2013) emphasizes how HIPPY and other home-visiting interventions for at-risk families face multiple risk factors that cannot be entirely controlled for, including higher rates of depression, abuse, and a myriad of problems that vary from home to home. She also emphasizes the importance of engaging fathers, a problem that Flores (2008) and others have also discussed in their research. Van Tuijl (2001) noted how in immigrant families in the Netherlands, an older sibling often

implemented the intervention rather than the parent. HIPPY researchers should see these gaps in research as an opportunity to expand the research tools that they use to investigate parent outcomes.

While administrators emphasize the importance of randomized control trials for HIPPY intervention research (Ellingsen and Wirtz 2012, Ellingsen and Myers 2013), there is good reason to consider quasi-experimental sampling designs that might reduce sampling bias when large samples are not feasible. Many researchers utilize a comparable national survey and conduct matching of participants based on socio-economic background. For example Liddell, Bennet, and colleagues (2011, 2012) utilized the Longitudinal Study of Australian Children (LSAC), and Black and Powell used the National Household Education Survey in Florida, USA (2004). The use of national surveys often appears more accurate than using a traditional comparison group, especially when samples are very limited in size. Occasionally norm scores are used from prior surveys to compare with HIPPY parents. For example, Green (2008) analyzed the Parent Self-Esteem Inventory for HIPPY parents. She then used a comparison group from Coopersmith's study on the same survey (1989). While she did not compute effect scores, we computed them based on her data, and they turned out to be similar to other effect sizes from our meta-analysis (d=.474). Another useful strategy has been to compare parents who participate in different interventions (e.g. Bierman et al. 2015).

Parent outcomes are often not measured by effect sizes. Many surveys analyzed interactions of participation in HIPPY with fidelity, facilitation, and background variables. For example, Van Tuijl and Leseman (2004) showed how social-emotional support interacted with ethnicity and other variables in their model, which contributed to the program's impact. In a similar manner, Kagitcibasi and colleagues (2009) showed longitudinally how interactions take place between mothers receiving training and the gender of the child. Mothers with boys who received training were able to further increase their child's cognitive achievement. Other studies that examined interactions focused on improvement outcomes based on the qualities of parents. For example, Goldstein and Karasik (2015) examined parents' involvement in conducting indoor and outdoor activities with their children. They compared mothers based on the mother's age and the child's place in the family, showing how younger, less experienced mothers were able to utilize the program more efficiently. However, their research did not present any outcomes that could be used to evaluate the overall impact of the program in our meta-analysis, as the study lacked a comparison group. In a similar fashion, Johnson and colleagues (2012) showed that mothers who had been participating in the program longer were more involved in their children's education, but their results were estimated by means of regressions that did not enable effect size measurements.

Several other studies that did qualify for our meta-analysis did not use a comparison group, and impact was measured only on improvement from pre and post surveys. For example, Palladino (2015) examined how HIPPY Dallas mothers improved in reading to their children over the course of the program, showing positive improvement (d=0.36). Presumably, research on future cohorts will lead to an evaluation of whether policy changes enabled the program to become more efficient.

Contextual Analysis Results

Since exploring effect sizes did not always provide intuitive explanations for program impacts, a contextual analysis was also undertaken. The following section discusses the qualities of research that proved four hypothesized outcomes which we explored through this contextual analysis. These outcomes were extracted from the research questions and themes from each study and correlated with qualitative summaries and positive outcomes that we wrote in the literature review form about each outcome. Each section includes a brief discussion of the theme and provides examples from specific studies about that outcome.

HIPPY works in combination with other interventions

HIPPY is not intended to be a stand-alone intervention, but rather to work in tandem with other types of interventions or educational opportunities, including center-based preschools. The Council of Community Pediatrics (2009) reviewed policy statements for medical practitioners about how to work in partnership with home-visiting programs, including HIPPY. They stress the importance of home-visiting in conjunction with health care, which they describe as an added-on effect. They caution that home-visiting is not a fix-all approach. Each program has distinct goals (reducing child abuse, providing school readiness, assisting mothers). Similarly, Beck et. al (2016) in their recommendations for medical practitioners show the benefits of home-visiting, including HIPPY and other interventions, such as care coordination programs that integrate physicians, social workers, and health care professionals. They emphasize collaboration between different interventions, as well as policy initiatives that create more resources for providing interventions to impoverished families.

Few studies look at an actual combination of intervention, but those that do highlight that there really is an added-on effect. One reason that studies of multiple interventions are so rare is that it becomes very difficult to isolate the effects of each treatment and amount of exposure, and to ensure that one has random samples for comparison. Sawhill and Karpilow (2015) highlighted this point when they conducted simulations to estimate the theoretical impact of multiple interventions. Their interest was modeling how much more children would succeed if interventions were provided for more low income children at each stage of life. HIPPY was examined in their study as an example of an early childhood intervention. They recommended multiple interventions throughout adolescence and adulthood. Brown and Lee (2015) discovered that a group that participated in Head Start and HIPPY scored “developed” on all sections of the Texas Primary Reading Inventory, while the Head Start only group did not have unanimous developed achievement. The results provide a framework for promoting collaboration between the two programs specifically, and make the case for the effectiveness of a combined center- and home-based approach for disadvantaged families.

HIPPY utilizes evidence-based research to adapt to each community’s needs

HIPPY is able to demonstrate tremendous benefits by employing certain strategies, such as the use of role play, recruitment of locals to become home-visitors, and conducting monthly

group meetings in addition to home-visits. HIPPY has been extremely successful by adapting to the needs of individual communities, allowing local home-visitors and parents to take ownership of the program (Beatch and Le Mare 2006). This section examines examples of research in which HIPPY programs have conducted studies to better facilitate the specific needs of their communities.

In their study with five aboriginal communities in Canada, Beatch and Le Mare (2006) discovered that training and retreats were an instrumental part of allowing mothers to connect with one another. Over time they discovered that mothers became more interested in using HIPPY to present aboriginal culture. Kyzer et. al (2016) explored how they could make their home visiting more effective with parents in Arkansas HIPPY, by training coordinators to use the Family Map Inventory (FMI) assessment tool and having the coordinators interview parents. Comparison between the coordinator's views and the family's own views of their needs matched on issues such as needing help with discipline strategies, but differed in regards to issues such as identifying poor monitoring and supervision in the home. The relationship and rapporteur established with parents are important for the success of a home-visiting program (Heaman et al. 2007). Liddell and colleagues (2009) explain how HIPPY needs to adapt to the work schedule of mothers, which they claim has been an impediment to recruitment. Likewise, Azzi-Lessing (2013) discusses some of the multiple risk factors that HIPPY and other home-visiting interventions face. She emphasizes how creating more flexibility and customization of the home visiting intervention will increase their efficacy for at risk families.

Evidence-based research has also sought solutions about how to adapt HIPPY for immigrant communities. Home-visitors must uncover how immigrant parents who are not proficient in the national language should instruct their children. In the Dutch context, Eldering and Vedder (1999), followed by Van Tuijl and colleagues (2001, 2004) examined how use of learning materials in the host language (Dutch) and the immigrants' native languages (Turkish and Arabic) impacted children's literacy. In the American context, Nievar and colleagues (2008) examined how they could tailor make the HIPPY program to be culturally relevant for Spanish-speaking families. While there is no given consensus on how immigrant families should incorporate their indigenous culture alongside the host culture when educating their children, the important point is that researchers should investigate the needs of the community and how HIPPY can best assist them. In that respect, Szalai and colleagues (2009) discuss how HIPPY and other interventions have been instrumental in the German context to support immigrant and Roma families, who suffer from discrimination and exclusion. They imply that more needs to be done by the government to connect migrants with organizations that will assist them to follow up and ensure that migrants continue to receive equal opportunities.

HIPPY is cost-effective and has significant impact

In the prior section on children outcomes, we conducted an actual meta-analysis that compared effect sizes between different studies that considered relative weights for each study to determine the overall effect of the program on various domains. However, the majority of

systematic literature reviews that have been conducted about HIPPY have utilized two slightly different approaches to meta-analysis, which we categorize here as cost-benefit comparisons and secondary evaluation comparisons.

Cost-benefit comparisons of child interventions generally involve the following four steps. First, the actual costs of each program are tallied; the actual amount that was or will be spent by year for each family, along with any other expenses such as research and training. Next, the researchers develop an assessment of the proven outcomes of each intervention. Third, the researchers assign monetary values to those outcomes that must be weighted accurately with future benefits, such as the value of a college degree. Finally, the ratio of costs to benefits are examined in an effort to determine which interventions are more effective. Investment in home-visiting thus can be evaluated by a local government for funding, for example, by comparing impact studies of numerous (occasionally competing) intervention programs. The results provide a simple heuristic for administrators who want to know the amount that their investments today will yield to society in the future.

Aos et. al (2004), in a study that is cited frequently with regard to HIPPY's impact (e.g. Karoly 2005, Avellar and Supplee 2013), provide evidence of HIPPY's cost efficiency. That study shows that while the HIPPY program costs $1,837 per child, it yields $3,313 in outcome benefits. On the other hand, that study found many other programs which did not prove to be cost efficient. In a different form of cost benefit study for the Brookings Institute, Sawhill and Karpilow (2015) conducted a simulation to examine what would happen if more disadvantaged children were able to participate in HIPPY and other life cycle interventions. They determine that early childhood interventions alone are not enough to improve outcomes into adulthood, claiming that the impact fades over time. They are not discounting the impact of HIPPY and other early childhood interventions. Rather, their research shows that if more children can participate in HIPPY and other interventions that have the potential to reach a large proportion of at-risk children, and those interventions are followed up with additional interventions at school age, racial gaps in the USA can be dramatically reduced. Their claim is that the impact that HIPPY has on children would be even more effective if additional interventions were provided.

As opposed to cost-benefit analyses, secondary analyses review the literature conducted about an intervention and rank that literature on scales for different categories, such as impact score according to research domains. In the USA, HomVEE (Home Visiting Evidence of Effectiveness) is one of the most highly touted examples of a secondary analysis and probably the largest ever conducted about home-visiting. The HomVEE review is a secondary analysis conducted on behalf of the Department of Health and Human Services (DHHS). It is a review for the Maternal, Infant and Early Childhood Home Visiting (MIECHV) program, which provides 1.5 billion dollars to home visiting programs. HIPPY was one of twelve programs that was recognized in HomVEE as being an evidence-based early childhood home visiting model according to DHHS criteria. Twenty additional programs were not considered evidence-based. Avellar and Supplee (2013) examined the results, showing how HIPPY had favorable effects on vocabulary, classroom adaptation and academic self-image. HIPPY focused only on child development, while most other models investigated had other intended outcomes, such as reductions in child abuse. Prior to the HomVEE study, Stoltzfus and Lynch (2009) also provided similar support for HIPPY in a report for the US Congress. HIPPY was recognized officially as an effective model that received and should

continue to receive funding and expansion. They recognized Hillary Clinton's support for HIPPY in Arkansas, emphasizing the uniqueness of HIPPY at targeting local paraprofessionals and alumni.

Outside of the USA, Nailon and Beswick (2014) reviewed policy decisions in Australia that have affected HIPPY and other early childhood programs by means of a more qualitative secondary analysis. In 2012 the Council of Australian Governments recommended a number of additional policy measures, which included supporting HIPPY. The importance of ECEC is highlighted along with the growing seriousness of the government to develop rubrics for guiding professionals and paraprofessionals to improve ECEC in the future. Another recent secondary analysis from outside the USA was conducted by the Early Intervention Foundation in the UK (EIF 2016). That review measured HIPPY on the strength of evidence, costs, and impact. HIPPY received favorable rankings on the strength of evidence and program costs, but the authors indicated that it was impossible based on their limited sample of evidence to provide an objective ranking for impact.

One problem of secondary reviews in general is that they focus on just a few pieces of literature: HomVEE (Baker et al. 1996, 1998, and Necoechea 2007) and EIF (Baker et al. 1998, Nievar et al. 2011, and Liddell et al. 2011). Another difficulty is that these reviews will often compare programs regardless of the populations they treat, putting programs that work with extremely at-risk populations, such as HIPPY, at a disadvantage. Likewise, the programs hone in on randomized control trials and quasi-experiments with high impact ratings. Meta-analyses often seek to bring child intervention studies up to the level of medical intervention studies. Meta-analysis is a common tool used in medical research. For this reason, Chaffin (2004) critiques early childhood intervention studies that lack randomized controls trials, a finding that has been reemphasized in meta-analyses that struggle to compare programs (Karoly 2005).

Evaluation meta-analyses often resort to a pass-fail approach, whereby a significant impact score from a quasi-experimental study or a randomized control trial is considered to represent impact. Wasserman (2006) and others have critiqued this over-reliance on RCTs, which are expensive and often difficult to reproduce. However, an emphasis on creating at the very least quasi-random experiments is clearly on display in most HIPPY publications and ECEC studies in general. Previous meta-analyses comparing HIPPY with other research did not recognize all of the studies that were conducted on a global scale with experimental designs. As a result, policy boards formed judgments based on a limited sample of data. This research review has sought to rectify that problem by providing a more expansive review of the studies available about HIPPY on a global scale, although our work is not complete.

Limitations

No study of parent interventions for child development lacks limitations, especially interventions such as HIPPY that treat disadvantaged populations with the use of paraprofessionals in the home environment. Some of the limitations of this research are associated with the methods adopted in the literature review, while others are associated with the methods of the original studies that were reviewed. Briefly, both types of limitations are

discussed to help provide a concerned reader with a critical perspective for improving this ongoing meta-analysis. We will begin first with the limitations that were associated with the methods of this literature review, although we note that there is some overlap: limitations of this study that are common to other studies of HIPPY and general complications from attempting to evaluate childhood education and care.

Limitations of Our Meta-Analysis

The quantitative meta-analysis presents a positive focus on child outcomes, ignoring the singular negative outcome identified in Baker et al. 1998, as well as all of the insignificant measures. On the other hand, there is also additional positive evidence for the benefits of HIPPY that were not included in the meta-analysis. Our review was limited to five outcomes per study, and hence many of the studies that were examined included additional positive outcomes. Furthermore, more studies are available that examined the program through experiments, which we were not able to include in this preliminary review. These results represent examples of HIPPY research, and not necessarily the average results of the program. If a researcher wanted to ask to what extent is HIPPY always effective, then it would be beneficial to have standardized tools of measurement and include a complete analysis of all of the indicators. Such an ambitious project would have necessitated contacting the original authors and requesting copies of their complete data sets, a task that was beyond the scope of the current project and fraught with seeming insurmountable complexities. We continue to update these results, but we emphasize that the task of accumulating all variables and all studies would be impossible. The limited data collection was in keeping with practice of other meta-analyses (HomVEE, EIF 2016, Aos et al. 2004), which also were tasked with the need for a pragmatically feasible research design that indicates whether a program has been effective.

This analysis also looked solely at the HIPPY intervention, although further interventions were examined in the literature review form. It is definitely within the capabilities of this tool to compare between interventions, but without common standardized tools such a comparison should also examine the context of the results. Likewise, this study did not take into account differences based on the random value of the sample. Hence, an RCT received the same weighted effect as a quasi-experimental or post-hoc study with the same sample size. Finally, there are issues with fidelity and attendance (e.g. Liddell et al. 2009) that were not explored, whereby those participants for whom the program might not have had an impact dropped out or did not complete the final questionnaire. This could not be explored in this research project.

HIPPY was evaluated on a global scale, as if there are no differences between countries. There was a limited amount of data from certain countries, and there was an overemphasis on data from the USA that represents a phenomenon of actual publications and not a bias of the sample. While the HIPPY model is similar between countries, the unique differences of how HIPPY is applied differently between and within countries deserves further study, a limitation that is also apparent within original research conducted to date.

Limitations of HIPPY Research

Our meta-analysis was based on data extracted from publications about others' research and not their actual data sets. One difficulty of including the full list of outcomes

from each study is that this data was parsed from publications in which the authors themselves often only presented the significant results. In order to conduct a proper meta-analysis, it would be necessary to obtain the full data results from the authors. This analysis did not include the results from insignificant tests, which would reduce the overall effect. This analysis also could not examine the results from identical tests, because when an identical test was examined (e.g. the Gumpel Readiness Inventory, the Who Am I cognitive skills test), the data available was limited to two or three studies and not sufficient to conduct a meta-analysis.

The results combine different types of tests and questionnaires. The quality of the outcome measures used in the original studies were not analyzed, primarily because the original studies provide few ways to make a comparison. The appendix does provide the information about the number of respondents and standard deviation, which along with the confidence intervals listed in the meta-analysis, can be used as a measure of validity. However, our analysis did not examine the actual instruments. In the eyes of most publications, the measurement tool that is utilized represents the best possible measurement tool available. While other ECEC research will actually compare measurement tools (e.g. Nutbrown 2011), and others will examine how well a tool can be perfected often by means of factor analysis (e.g. Fantuzzo et al. 2006) or Item Response Theory (e.g. Piasta et al. 2016), the current study was limited in its ability to make a comparison between the measurement tools that were utilized in each study. Obtaining a copy of each of the measurement tools from the original authors of each study was beyond the feasibility of the current research task. As a result, this study did not examine the quality of the measurements, only the quality of the outcomes themselves.

HIPPY targets somewhat different age and language groups in different countries and even runs for different number of years in some countries, but the current study did not examine these differences. The primary problem in doing so was that we lacked a sufficient number of examples and comparable data to make these analyses. Rather than a meta-analysis, it would have been beneficial to engage in a new research study that interviewed administrators about these differences.

Ongoing Research

This study has gone further than any prior study of HIPPY programs in that it incorporated a proper meta-analysis that accounted for confidence intervals of effect sizes and included a larger number of studies than any previous analysis. However, our work is far from complete. Further research is recommended to both expand the number of studies included in the meta-analysis and obtain complete results from the authors of the original studies. At the time of writing, HIPPY existed in sixteen countries, but evaluations that qualified for our meta-analysis (included a quantitative, experimental design for child outcomes) were only obtained from seven of them. HIPPY offices in each nation have been compiling research about early childhood education, and we have just tapped the surface of the studies in existence. Many additional studies were conducted, which were identified in our open search. Some of these studies have been published in academic journals, some are published on the national HIPPY website, while others are featured in regional HIPPY websites, external websites, or not featured at all. In some cases, the onus is merely to evaluate published studies, but we also do

not yet have access to all of the studies. Additional assistance is requested from HIPPY researchers around the world, especially from those HIPPY participant countries that are not represented in our sample (Argentina, Austria, Denmark, Finland, Germany, Italy, Liberia, South Africa, and Sweden).

Number of studies in meta-analysis by country

USA	14	54%
Australia	4	15%
Turkey	3	12%
Israel	2	8%
Canada	1	4%
Netherlands	1	4%
New Zealand	1	4%
Total	26	100%

The online form (http://hippyresearch.org/form/) was developed in order to provide researchers from around the world with a platform to share studies from their countries in a standardized format that will enable us to continue this meta-analysis. Besides studies devoted only to HIPPY, we also seek to investigate further studies of other intervention programs and general research about home-visiting interventions and similar programs. Research does not necessarily need to be quantitative. Case studies and qualitative data also enrich the quantitative findings. The online form also enables users to upload graphs, pictures, and other media. An administrator function allows us to preview these results before allowing them to be viewed by the public. Until now the research form has been a historical analysis, but future developments will enable researchers to enter studies as they are completed. The searchable database allows an international network of researchers to collaborate with each other.

Finally, we are looking forward, and aim to create an innovative and dynamic environment for not just researchers but all members of the HIPPY community to contribute and obtain information from the online database. Therefore, we are planning new developments, such as the incorporation of a storytelling platform for home-visitors and families to contribute their own stories and feedback. A customizable questionnaire for home-visitors and families could also be built into the existing website. This questionnaire would include a database of questions and also enable researchers to formulate their own questions for country-specific questionnaires. The goal would be to create a semi-universal questionnaire for parents, trainers and other educators. It also would assist countries to formalize survey evaluation and other research projects. Future enhancements could also incorporate software for child assessment and learning tools.

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Appendix

Appendix A: Child Outcomes Soon After Intervention

values listed as program:control
no <*> indicates that the reported d value was used and imputations were made for the SD
* exact conversion
** estimated conversion from extrapolation of significance statistics
*** insufficient information reported to perform conversion
# not a comparison with program and control groups or inadmissible for meta-analysis
{MD}=absolute mean difference
(SD)= standardized deviation
N=number of respondents
D= Cohen's D, Effect Size

Author	Variable	D {MD} (SD) <N>	Measurement Reported (Mean and Significance)	Type
Brown and Lee 2015	Texas Primary Reading Inventory Developed/Expected Score of HIPPY/Head Start Group versus Head Start Only Group	0.88* {.33}* (0:0.49)* <10:12>	100%:67% mean, Chi-square test=4.07, p<.05	Cognitive skills, Literacy
	Children's language proficiency of HIPPY/Head Start Group versus Head Start Only Group	***# *** *** <10:12>	5.59 Likelihood ratio, p=.018	Cognitive skills, Literacy
Palladino 2015	HIPPY vs Non-HIPPY Kindergarten Students at or above the Age-Appropriate Range on BRIGANCE	.20** {.99} (.5012:.5009)** <77:63>	54.6%:44.7% mean	Cognitive skills
	HIPPY vs Non-HIPPY Academic/ Cognitive Development	.24** {.12} (.5025:.5038)** <57:40>	40.4%:28.4% mean	Cognitive skills
	"Percentage of students at or above age-appropriate range on the Academic/Cognitive Development domain significantly and practically differed by HIPPY participation"	***# *** *** <77:63>	0.13 Phi, ratio, p<.05	Cognitive skills
Barnett 2012	Parents' perceived child's math ability	***# *** *** <197:4983>	1.81 Odds Ratio, p<.05	Cognitive skills, Math
	Less concerns about child's ability to understand what parent says	***# *** *** <197:4983>	6.83 standard deviation difference	Behavioral
	SDQ peer problems scale, child's ability to relate to their peers, as reported by the parent	***# {0.40}** *** <67:1672>	standard deviation difference, p=.03	Behavioral

Green 2008	Correlation Between Treatment Intensity and Child and Peabody Picture Vocabulary Test	1.54**# *** *** <15>	0.61, Pearson's R, p<.001	Cognitive skills, Literacy
	Correlation Between Treatment Fidelity and Child and Peabody Picture Vocabulary Test	1.46**# *** *** <15>	0.59, Pearson's R, p<.01	Cognitive skills, Literacy
	Vineland Adaptive Behaviour Scales- Socialisation Domain	1.26** {.08} (.06:.06)** <15:17>	90.2:96.4 at Stage 1, improved to 94.2: 92.9 by Stage 3, mean score improvement from pre to post, F=4.6 , p<.01	Behavioral
Necoechea 2007	Expressive One-Word Picture Vocabulary Test	0.35* {.05}** (0.10:0.11)** <26:25>	28.73:25.96, mean, F=8.88, p<.01	Cognitive skills, Literacy
Godfrey 2006	Who am I? Cognitive skills test, Compared to age norm	.24** {1.80}* (7.54:7.54**) <11:12>	21.8:24.6 at wave 1 decreased difference to 38.4:39.4 by wave 3, mean scores	Cognitive skills
	Who am I? Cognitive skills test, Compared to control group	*** {2.49}** *** <11:12>	18.6:24.8 at wave 1 decreased difference to 36.4:40.0 by wave 3, mean scores	Cognitive skills
	The Gumpel Readiness Inventory Compared to control group	*** *** *** <11:12>	17.20:19.75 at pre to 19.33:19.00 at post, mean scores	Cognitive skills
Van Tuijl and Leseman 2004	Post-test native language vocabulary	1.75* {8} (4:5) <17:13>	28:20, mean score post, 0.46 Eta-squared	Cognitive skills, Literacy
	Post-test cognitive-premath skill	1.07* {6} (5:6) <17:13>	30:24, mean, 0.23 Eta-squared	Cognitive skills, Math
	Post-test productive native vocabulary with controls	.52**# *** *** <17:13>	0.25 Correlation of program effect on native vocabulary when	Cognitive skills, Literacy

			controlling for pretest and interaction	
	Post-test cognitive pre-mathematical skills with controls	.32**# *** *** <17:13>	0.16 Correlation of program effect on pre-math skills when controlling for pretest and interaction	Cognitive skills, Math
Gilley **2003**	Who am I? Cognitive skills test	.65* {3.1} (5.0:4.4) <33:33>	34.0: 30.9 mean, p<.05	Cognitive skills
	Literacy Baseline Test	.60* {3.8} (6.4:6.1) <33:33>	18.6: 14.8 mean, p<.05	Cognitive skills, Literacy
	ACER Teacher Assessment of Progress in Reading	.76* {6.2} (7.9:8.2) <33:33>	19.4: 13.2 mean, p<.05	Cognitive skills, Literacy
	I can do maths... Cognitive skills test	1.01* {3.8} (3.7:3.7) <32:33>	19.2: 15.4 mean, p<.01	Cognitive skills, Math
	Gumpel Readiness Inventory	.50* {2.0} (4.1:3.8) <32:33>	12.2:10.2 mean, p<.05	Cognitive skills
Van Tuijl 2001	Ordering: concepts, general cognition among Turkish immigrants	0.50 {2.7} (5.9:6.1) <122:59>	27.7:25.0, mean,	Cognitive skills
	UGT: premath, number concepts among Turkish immigrants	0.42 {2.9} (7.2. 8.0) <122:59>	22.0:19.1, mean	Cognitive skills, Math
Gumpel 1999	School Readiness Inventory (RI)	0.44 {.28} (.45:.63) <81:81>	3.62:3.38, mean	Cognitive skills
	RI Low difficulty item, count forward and backward	0.32 {.17} (.58:.47) <81:81>	3.86:3.69, mean	Cognitive skills, Math
	RI Low difficulty item, Demonstrates understanding of concepts such as: 3.86 3.70 0.31 before-after	.31 {.16} (.46:.66) <81:81>	3.86:3.70, mean	Cognitive skills
	RI Medium difficulty item, Pays attention during class	0.40 {.25} (.53:.70)	3.71:3.46, mean	Behavioral

		<81:81>		
	RI High difficulty item, Can break down a complex task into its constituent parts	0.47 {.41} (.75:.99) <81:81>	3.35: 2.94, mean	Cognitive skills
Baker et al. 1998	Cognitive Skills at end of program, NY Cohort I	0.63* {2.93} (4.60:4.60)** <37:32>	52.21:49.28, mean, p=.04	Cognitive skills
	Classroom Adaptation at end of program, NY Cohort I	0.69* {.91} (1.31:1.31)** <37:32>	3.66:2.75, mean, p=.04	Behavioral

Appendix B: Child Outcomes Year/s After Intervention

Author	Variable	Effect Size	Measurement	Type
Johnson et al. 2012	Attendance	.31 {1.15} (3.09:4.33) <279:279>**	97.03: 95.88, mean 12.9, F-test of hierarchical analysis of between group difference	Behavioral
	Pre-K Enrollment	.83** {.32} (0.24:0.49)** <279:279>**	94%: 62%, mean, 99.88, F-test of hierarchical analysis of between group difference	Behavioral
	Retained grade level (opposite calculated)	.29* {.03} (.103:.103)** <279:279>**	3%:6%, mean, 4.37, F-test of hierarchical analysis of between group difference	Cognitive skills
	Math Achievement	.28* {54.81} (184.02:208.31) <108:108>**	2241.31: 2186.50, mean, 4.2, F-test of hierarchical analysis of between group difference	Cognitive skills, Math
Chatterji 2014	HIPPY siblings improvement in math	.17** {.2025}** (1.07:1.28) <154:165>	-0.0175: -0.220, std score of treatment pair compared to control pair, 0.234, standardized regression coefficient	Cognitive skills, Math
	Younger sibling improvement over older sibling that did not participate in HIPPY	.11**# *** *** <154:165>	0.213, standardized regression coefficient	Cognitive skills
	Effect of HIPPY on math when controlling for family-level demographics	.26**# *** *** <154:165>	.588, standardized regression coefficient	Cognitive skills, Math

	HIPPY siblings achievement in math	.13 and .31**# *** *** <154:165>	0.268 and 0.739, standardized regression coefficient	Cognitive skills, Math
	Treatment effect against being held back	.06**# *** *** <154:165>	-0.117, standardized regression coefficient "HIPPY students are between 3.0% and 11.7% less likely to be held back relative to their peers"	Cognitive skills
Brown 2012	Held back one grade (retention) by 5th grade, inverse used	1.04** {.446} (0.355: 0.492)** <130:130>	14.6%:59.2%, Percent held back one year by 5th grade	Cognitive skills
	TAKS (Texas Assessment of Knowledge and Skills) reading scores at 5th grade	.90** {475} (178.1:725.4) <130:130>	2220:1745, Mean, 7.259, T score	Cognitive skills
	TAKS (Texas Assessment of Knowledge and Skills) math scores at 5th grade	.99** {228} (227.5:230.4) <130:130>	2322: 2094, Mean, 7.9, T score	Cognitive skills
	Passed TAKS reading at 5th grade	1.02** {.40} (0.428:0.347)** <130:130>	80.8%:40.8%, Mean	Cognitive skills
	Attendance at 5th grade	.18**# *** *** <130:130>	2.84, T score	Behavioral
Nievar et al. 2011	Regression predicting math achievement for third grade low-income Latino children	***# *** *** <115:115>	0.19, standardized regression coefficient for HIPPY participation, p<.05	Cognitive skills, Math
	3rd grade math scores	.43* {81.04} (199.41:179.87) <115:115>	2253.13: 2172.09, mean, d=.43 reported	Cognitive skills, Math
	Academic Stimulation	0.73# *** *** <54:54>**	F=13.6, p<.001, d=.73 reported, means and SD not reported	Cognitive skills
Kagitcibasi 2009	College attendance, 19 year follow up	.31* {.149} (0.503: 0.460)* <47:84>	44.7%:29.8%, Mean	Cost efficiency
	Owns a credit card, 19 year follow up	.35* {.172} (0.462:0.502)* <47:84>	70.2%:53.0%, Mean	Cost efficiency

	Mean completed years of education	.28** {.87}** (3.08:3.11)** <47:84>	11.33:10.46**, Mean calculated from cumulative tallies for each care type	
Karoly 2005	Total Benefits to Society per Child ($)	***#	3,032 net dollar amount, based on Aos et al. (2004)	Cost efficiency
Mani-Aiken 2004	Average 1st grade school marks at the end of the year	.25* {3.73}* (15.25:14.4)* <15:79>	85.18: 84.2, Mean at post, 82.89: 85.64, Mean at pre	Cognitive skills
	Average 1st grade school marks in Hebrew language	.27* {4.81} (16.39:17.56) <15:79>	3.90: -0.910, Mean difference calculated	
	Average 1st grade school marks in computing	.30 {3.56} (6.999:12.536) <15:79>	2.37: -1.19, Mean difference calculated	
Aos et al. 2004	Benefits Minus Costs Per Youth	***#	$1,476 Net benefit	Cost efficiency
	Benefits per Dollar of Cost	***#	1.80 ratio of benefit to cost	Cost efficiency
Bradley and Gilkey 2002	Class grades in reading compared to Other Preschool Group	.28* {.31} (1.06:1.15) <516:516>	3.06:2.75, mean, d=0.28	Cognitive skills
	Achievement test in reading compared to Other Preschool Group	.46* {10.2} (20.3:23.8) <516:516>	45.7:35.5, mean, d=0.50	Cognitive skills
	Achievement test in math compared to Other Preschool Group	.43* {9.4} (20.4:23.7) <516:516>	45.8:36.4, mean, d=0.45	Cognitive skills
	Classroom behavior adjustment compared to Other Preschool Group	.24* {.23} (.87:1.05) <516:516>	3.57:3.34, d=0.25	Behavioral
	Classroom behavior adjustment compared to no preschool	.32* {.28} (0.87:0.88) <516:384>	3.57:3.29, mean, d=.23	Behavior

Kagitcibasi 2001	Language GPA 7 years after completion	.48* {.67} (1.36:1.41) <84:84>**	8.85:8.18, mean; 3.08, T	Cognitive skills
	Fourth year comparative standing of children's IQ based on mother training	***# *** *** <84:84>**	18.37, F	Cognitive skills
	Fourth year comparative standing of children's analytical skills based on mother training	***# *** *** <84:84>**	7.81, F	Cognitive skills
	WISC-R vocabulary test scores 7 years after completion	***# *** *** <84:84>**	3.8, F	Cognitive skills
Barhava-Monteith et al. 1999	Concepts About Print	.45* {1.32} (3.59:4.19) <77:704>	15.92:14.60, mean, p<.01	Cognitive skills
	Word test	.31* {1.41} (9.92:8.51) <77:704>	9.92: 8.51, mean, p<.01	Cognitive skills
	Burt Reading Test	.26* {2.41} (8.93:9.24) <77:704>	14.01:11.60, mean, p<.05	Cognitive skills
	School Language	.42* {1.38} (3.36:3.09) <29:29>	8.14:6.76, mean	
	Quantitative Language	.20 {.55} (2.26:2.42) <29:29>	5.48:4.93, mean	
Baker et al. 1998	Standardized Reading at one year follow up of NY Cohort 1	0.75 {16.17} (21.3:21.3)** <37:32>	54.25: 38.08, mean, d=.75, p=.03	Cognitive skills
	Classroom Adaptation at one year follow up of NY Cohort 1	0.68 {.77} (1.12:1.12)** <37:32>	3.60:2.83, mean, d=.68, p=.02	Behavioral

Appendix C: Parent Outcomes

Author	Variable	Effect Size	Measurement
Prairie 2015	Parent's sense of belonging to their local community during the year the child was in grade 1.	.45**# *** *** <53:52>	2.23, Z-Score, p=.03
	Meetings with the teacher were requested by the parent during the year the child was in grade 1.	.54**# *** *** <53:52>	2.68, Z-Score, p=.01
	Meetings with the teacher were to discuss problems with the child in school during the year the child was in grade 1.	.41 *** *** <53:52>	-2.08, Z-Score, p=.04
Palladino 2015	Difference of reading to children between pre and post <No comparison, pre:post>	.358** *** (.585:.845) <272:271>	58.5%:84.6%, mean
	"Talk about nature, scientific discovery experience, or do a science project with your child?" pre to post <No comparison, pre:post>	1.12** {.48} (.385:.474) <273:273>	18%:66%, mean
Brown 2013	Socioemotional development, Approaches to learning, Physical development, Language development, and General knowledge (closed the gap)	***# *** *** <18:18>	T-tests, insignificant differences between teenage mothers and adult mothers after intervention
Johnson et al. 2012	Home involvement of first-year of HIPPY mothers in academic-related learning, measure of pre to post improvement <No comparison, pre:post>	.36 *** *** <87:87>**	d=0.36
Barnett 2012	Higher levels of support from "other family members"/"friends" at the end of the program	***# *** *** <112:1683>	2.28/2.94, Odds Ratio
	Neighborhood belonging scale	.30 *** *** <112:1683>	d=0.3
Nievar et al. 2011	Parental Involvement and Efficacy	.66 *** *** <54:54>**	F=11.13, d=0.66
	Effect of participation on home environment	***# ***	0.26, Beta, p<.05, third

		*** <54:54>**	tier of hierarchical regression
Kagitcibasi 2009	Interaction of mother training and time#	***# *** *** ***	2.5, F
Flores 2008	Arguments about money	.345 {.44} (1.36:1.16) <46:45>	2.69:3.13, mean, 6.79, T-test
	Arguments about showing affection between parents	.704 {.90} (1.42:1.09) <46:45>	2.43:3.33, mean, 22.74, T-test
	Arguments about religion	.364 {.40} (1.03:1.30) <46:45>	1.46:1.89, mean, 11.58, T-test
	Arguments about other women	.279 {.25} (.727:1.03) <46:45>	1.21:1.46, mean, 7.45, T-test
Green 2008	Parent Self-Esteem Inventory	.474 (20.0:18.8) (20.0:15.4) for pre to post <28:19, pre to post> <19:19**>, post to norm	72.7 at Stage 1 increased to 81.1 at Stage 3, and compared to 71.7 norm, Improvement of T=2.2, Mean score and t-test, p=.01
Necoechea 2007	Parent involvement (PI) composite score	.87 {11.53} (15.07:1.45) <26:25>	71.85:60.32, mean, d=0.87, F=33.48, p<.0001
Kagitcibasi 2001	Child was spanked or beaten at 4th year	.78* {.45} (.38:.72) <48:49>**	1.17: 1.62, -3.38, T, p=0.000

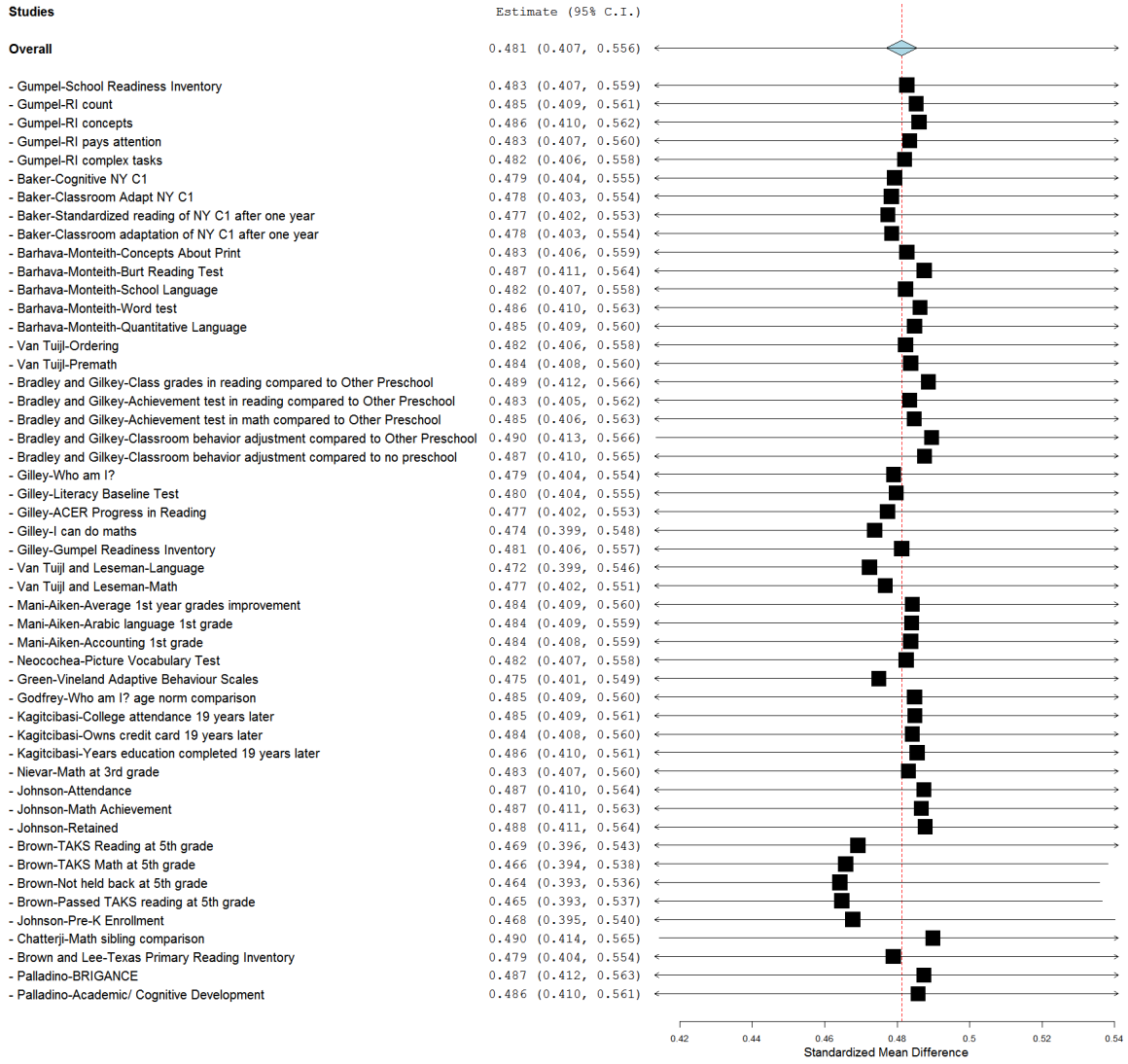
Appendix D: Quantitative Experiments Utilized in the Meta-Analysis

#	Title	Year	Author	Country
1	Evaluation Of The Home Instruction For Parents Of Preschool Youngsters (HIPPY) Program	2015	Prairie Research Associates	Canada
2	Evaluating The Efficacy Of Children Participating In Home Instruction For Parents Of Preschool Youngsters And Head Start	2015	Amber L Brown and Joohi Lee	USA
3	Evaluation Of The 2014-15 Home Instruction For Parents Of Preschool Youngsters (HIPPY) Program	2015	Dianne K. Palladino	USA
4	The Long-Term Effect Of The Home Instruction For Parents Of Preschool Youngsters (HIPPY) Program On Academic Achievement: Evidence From A School District In Texas	2014	Sherlene Chatterji	USA
5	Identifying Continuous Quality Improvement Priorities In Maternal, Infant, And Early Childhood Home Visiting	2014	Julie Preskitt; Matthew Fifolt; Peter M. Ginter; Andrew Rucks; Martha S. Wingate	USA
6	The Impact Of Early Intervention On The School Readiness Of Children Born To Teenage Mothers	2013	Amber L Brown	USA
7	The Effects Of The Home Instruction For Parents Of Preschool Youngsters (HIPPY) Program On School Performance In 3rd, 5th, 7th And 9th Grades.	2012	Brown, A. L.	USA
8	The Home Instruction For Parents Of Preschool Youngsters Program's Relationship With Mother And School Outcomes	2012	Ursula Y. Johnson, Veronica Martinez-Cantu, Arminta L. Jacobson & Carla-Marie Weir	USA
9	Evaluating The Effectiveness Of The Home Interaction Program For Parents And Youngsters (HIPPY)	2012	Barnett, T., Diallo Roost, F., & McEachran, J.	Australia
10	Impact Of HIPPY On Home Learning Environments Of Latino Families	2011	Nievar, A. M., Jacobson, A., Chen, Q.,	USA

			Johnson, U., & Dier, S.	
11	Continuing Effects Of Early Enrichment In Adult Life: The Turkish Early Enrichment Project 22 Years Later	2009	Kagitcibasi, C.,Sunar, D.,Bekman, S.,Baydar, N., & Cemalcilar, Z.	Turkey
12	Marital Conflict And Marital Satisfaction Among Latina Mothers: A Comparison Of Participants In An Early Intervention Program And Non-Participants	2008	Marisa J. Flores	USA
13	Challenging Disadvantage: The Social Outcomes Of An Early Educational Intervention Within The Family	2008	Jennifer Green	Australia
14	Children At-Risk for Poor School Readiness: The Effect of an Early Intervention Home Visiting Program on Children and Parents	2007	Denise Marie Necoechea	USA
15	Responses To An Early Childhood Educational Intervention With Disadvantaged Families: An Exploratory Study	2006	Celia Godfrey	Australia
16	Early Childhood Interventions Proven Results, Future Promise	2005	Karoly, Lynn A	USA
17	Functioning And Outcomes Of The Etgar Program: Training For Mothers And Fathers - Programs For Preschoolers	2004	Idit Mani Aiken	Israel
18	Benefits And Costs Of Prevention And Early Intervention Programs For Youth	2004	Steve Aos, Roxanne Lieb, Jim Mayfield, Marna Miller, Annie Pennucci.	USA
19	Improving Mother–Child Interaction In Low-Income Turkish–Dutch Families: A Study Of Mechanisms Mediating Improvements Resulting From Participating In A Home-Based Preschool Intervention Program	2004	Cathy van Tuijl and Paul P.M. Leseman	Turkey
20	Early Days, Much Promise An Evaluation Of The Home Instruction Program For Preschool Youngsters (HIPPY) In Australia	2003	Tim Gilley	Australia
21	The Impact Of The Home Instructional Program For Preschool Youngsters (HIPPY) On School Performance In 3rd And 6th Grades	2002	Robert H. Bradley & Barbara Gilkey	USA
22	Long-Term Effects Of Early Intervention: Turkish Low-Income Mothers And Children	2001	Cigdem Kagitcibasia, Diane Sunarb , Sevda Bekmanb	Turkey
23	Efficacy Of An Intensive Home-Based Educational Intervention Programme For 4-	2001	Van Tuijl, C., Leseman, P. M., & Rispens, J.	Netherlands

	To 6-Year-Old Ethnic Minority Children In The Netherlands			
24	A Promising Start: An Evaluation Of The HIPPY Program In New Zealand	1999	Galia Barhava-Mònteith, Niki Harré & Jeff Field	New Zealand
25	Use Of Item Response Theory To Develop A Measure Of First-Grade Readiness	1999	Gumpel, Tom	Israel
26	The Effects Of The Home Instruction Program For Preschool Youngsters On Children'S School Performance At The End Of The Program And One Year Later.	1999	Baker, A. J. L., Piotrkowski, C. S., & Brooks-Gunn, J.	USA

Appendix E: Leave-One-Out Meta-Analysis



Appendix F: Question Summary

There are potentially 18 questions on the short form and an additional 8 questions on the long form. Description of the logic for showing and hiding questions, as well as answer choices, are outlined on the following page.

Q1 Please indicate whether you would like to answer the long or short form.

Q2 Which type of document will you be summarizing?

Q3 Which type of educational program does this research investigate?

Q4 Is HIPPY mentioned in this research?

Q5 Where does this study take place?

Q6 What is the name of the program that this study investigates?

Q7 Which type of intervention program does this study investigate?

Q8 Besides home-visiting interventions, does this study investigate center-based or other types of interventions?

Q9 Research or Publication Title

Q10 In what year was this research published or presented?

Q11 Who are the authors of this research?

Q12 Research questions

Q13 Which methods does this study use?

Q14 Please classify the data collection.

Q15 Please classify the sampling method.

Q16 Approximately how large was the total sample size?

Q17 Who does this study investigate directly?

Q18 Please drag into the box up to five themes of this research.

Q19 Please briefly summarize the research, methods, and findings. Specific relevance of this study to HIPPY should be emphasized.

Q20 What are the most positive outcomes of this research?

Q21 What are some of the gaps in the research and future investigations that you would recommend to support this research?

Q22 Is there an internet url where we can locate this research?

Q23 Is there an abstract available for this study?

Q24 Are there any other comments that you wish to provide?

Q25 Do you have any graphs, pictures, or other documents that you would like to upload?

Q26 Please provide your name and email.

Appendix G: Research Form Codebook

HIPPY International Research Review Website, v2.0

Dear HIPPY Researcher,

The following research summary request is part of a comprehensive multinational review of studies that investigate projects affiliated with the Home Instruction Program for Parents of Preschool Youngsters (HIPPY) International, as well as strategies for home-based early childhood education that will be relevant to HIPPY.

We ask for your assistance to provide information about research that you are conducting or learned about. This research does not need to be specifically about HIPPY International, but it should analyze similar approaches and practices.

The goal of this data input is to collect evidence-based research about home visiting intervention strategies. After review, your summaries will be updated to the HIPPY International website. Please ensure that disclosure of this research is permissible prior to submitting. If you have any questions, write to hippyresearch@gmail.com.

This form includes two pages of questions. The first page includes multiple choice questions, most of which permit more than one response. The second page includes several open response questions with word limits. We recommend first reading through the questions on the form and then reviewing the research that you will submit. It is beneficial to keep notes on a separate document. You may leave questions blank.

Thank you for your assistance,

The HIPPY International Research Team

Q1 Please indicate whether you would like to answer the long or short form. The short form is suited for ongoing and informal studies. The long form is suited for published academic research.

- ❍ The long form (1)
- ❍ The short form (2)

Q2 Which type of document will you be summarizing?

- ❑ Published book chapter (1)
- ❑ Published entire book (8)
- ❑ Published journal article (2)
- ❑ Published institute report (15)
- ❑ Unpublished institute report (17)
- ❑ Unpublished paper (3)
- ❑ Presentation (4)
- ❑ Website (5)
- ❑ Newspaper/Magazine Article (16)
- ❑ Ongoing Research (6)
- ❑ Other (7) _____

Q3 Which type of educational program does this research investigate?

- ❑ A HIPPY program (1)
- ❑ A HIPPY affiliated program (2)
- ❑ An educational program that is not affiliated with HIPPY (3)
- ❑ This research does not investigate any specific educational programs (4)
- ❑ Other (5) _____

Answer If Which type of educational program does this research investigate? A HIPPY program Is Not Selected Or Which type of educational program does this research investigate? A HIPPY affiliated program Is Not Selected

Q4 Is HIPPY mentioned in this research?

- ❍ HIPPY is not mentioned (1)
- ❍ HIPPY is mentioned but not examined directly (2)
- ❍ HIPPY is mentioned and examined but is not the main topic (4)
- ❍ HIPPY is the main topic (3)

Answer If Which type of educational program does this research investigate? q://QID2/SelectedChoicesCount Is Greater Than or Equal to 1

Q5 Where does this study take place?

Answer If Which type of educational program does this research investigate? A HIPPY program Is Selected

List of HIPPY member countries

- ❑ Argentina (1)
- ❑ Australia (2)
- ❑ Austria (3)
- ❑ Canada (4)
- ❑ Germany (5)
- ❑ Israel (6)
- ❑ Italy (7)
- ❑ Liberia (11)
- ❑ New Zealand (8)
- ❑ USA (10)

Answer If Which type of educational program does this research investigate? A HIPPY affiliated program Is Selected

List of HIPPY affiliated countries

- ❑ Denmark (1)
- ❑ Finland (2)
- ❑ Netherlands (3)
- ❑ Sweden (5)
- ❑ Turkey (4)

Answer If Which type of educational program does this research investigate? A HIPPY program Is Selected Or Which type of educational program does this research investigate? A HIPPY affiliated program Is Selected

- ❑ This study takes place in additional countries (1)

Answer If This study takes place in additional countries Is Selected

Please list up to 5 countries where this research takes place. Country #1

Answer If Please list up to 5 countries where this research takes place. Country #1 Text Response Is Not Empty

Country #2

Answer If Country #2 Text Response Is Not Empty

Country #3

Answer If Country #3 Text Response Is Not Empty

Country #4

Answer If Country #4 Text Response Is Not Empty

Country #5

Answer If Which type of educational program does this research investigate? An educational program that is not affiliated with HIPPY Is Selected Or Which type of educational program does this research investigate? A HIPPY affiliated program Is Selected

Q6 What is the name of the program that this study investigates? (You may list up to 5 programs)

Program #1:

Answer If What is the name of the program that this study investigates? (You may list up to 5 programs)Program #1Text Response Is Not Empty

Program #2:

Answer If Program #2: Text Response Is Not Empty

Program #3:

Answer If Program #3: Text Response Is Not Empty

Program #4:

Answer If Program #4: Text Response Is Not Empty

Program #5:

Answer Long Form

Q7 Which type of intervention program does this study investigate?

- ❑ Home-Visiting Intervention (23)
- ❑ Center-Based Intervention (24)
- ❑ Other (25) _____
- ❑ An intervention program is not investigated (26)

Answer If Which type of educational program does this research investigate? A HIPPY program Is Selected Or Which type of educational program does this research investigate? A HIPPY affiliated program Is Selected

Q8 Besides home-visiting interventions, does this study investigate center-based or other types of interventions?

- ❑ This study also investigates center-based interventions (23)
- ❑ This study investigates other types of interventions, please specify (25)

  _____

Q9 Research or Publication Title

Q10 In what year was this research published or presented?

Q11 Who are the authors of this research?

Answer Long Form

Q12 Research questions (You may write up to 5 questions)

Research Question #1:

Answer If Research questions (You may write up to 5 questions)Research Question #1: Text Response Is Not Empty

Research Question #2:

Answer If Research Question #3: Text Response Is Not Empty

Research Question #3:

Answer If Research Question #3: Text Response Is Not Empty

Research Question #4:

Answer If Research Question #4: Text Response Is Not Empty

Research Question #5:

Answer Long Form

Q13 Which methods does this study use?

- ❑ Questionnaires (1)
- ❑ Interviews (2)
- ❑ Field notes (3)
- ❑ Quantitative Data Analysis (4)
- ❑ Qualitative Data Analysis (5)
- ❑ Achievement Tests (6)
- ❑ Longitudinal Study (changes over time, such as a pre and post) (7)
- ❑ Prior Research Review (9)
- ❑ Other (8) _____

Answer If What types of methods does this study use? Quantitative Data Analysis Is Selected Or What types of methods does this study use? Test Scores Is Selected Or What types of methods does this study use? Longitudinal Study (changes over time, such as a pre and post) Is Selected

Q14 Please classify the data collection.

- ❍ 1. Cross-sectional (1)
- ❍ 2. Post test with background data (2)
- ❍ 3. Pre and Post without repeated measures (3)
- ❍ 4. Longitudinal without repeated measures (25)
- ❍ 5. Pre and post tests with repeated measures (4)
- ❍ 6. Longitudinal with repeated measures (5)
- ❍ Not Relevant (6)

Answer If What types of methods does this study use? Quantitative Data Analysis Is Selected Or What types of methods does this study use? Test Scores Is Selected Or What types of methods does this study use? Longitudinal Study (changes over time, such as a pre and post) Is Selected

Q15 Please classify the sampling method.

- ❍ 1. No comparison group and no background controls (1)
- ❍ 2. No comparison group with background controls (2)
- ❍ 3. Comparison group and no background controls (3)
- ❍ 4. Comparison group with background controls (4)
- ❍ 5. Randomized Control Trial (6)
- ❍ Not Relevant (7)

Answer If What types of methods does this study use? Interviews Is Selected Or What types of methods does this study use? Questionnaires Is Selected Or How complex was the data collection? Please choose from the following simplified MMS rankings. This is not an evaluation of the quality of the paper itself, just the level of sampling methods... 1. Cross-sectional analysis Is Displayed

Q16 Approximately how large was the total sample size?

- ❍ No respondents (1)
- ❍ 1-50 (2)
- ❍ 51-100 (3)
- ❍ 101-200 (4)
- ❍ 201-500 (5)
- ❍ Over 500 (6)

Q17 Who does this study investigate directly?

- ❑ ECEC (Early Childhood Education and Care) Coordinators/Administrators (1)
- ❑ ECEC Paraprofessionals/Home Visitors (2)
- ❑ ECEC Trainees (7)
- ❑ ECEC Professionals (19)
- ❑ School-based/Center-based teachers (12)
- ❑ Children/Participants at the time of intervention (3)
- ❑ Children/Participants after the intervention (20)
- ❑ Parents (4)
- ❑ Community (5)
- ❑ Health professionals (17)
- ❑ Other (6) _____

Answer Long Form

Q18 Please drag into the box up to five themes of this research. If there is an important theme that is not listed, please drag the choice "other themes" at the end of the list and write in the unique theme.

What are the main themes investigated in this research?
_____ center-based preschool (60)
_____ child behavioral assessment (61)
_____ child health/mental health (62)
_____ child psychological assessment (63)

_____ community (64)
_____ program curriculum (65)
_____ ethnic/migration groups (66)
_____ home visitor-parent relations (67)
_____ multiple program comparison (68)
_____ paraprofessional feedback/follow-up (69)
_____ paraprofessional-professional comparison (70)
_____ parent behavioral/psychological assessment (71)
_____ parent health/mental health (72)
_____ parent-child relations (74)
_____ program administration/policy (75)
_____ program efficiency/ modifications (76)
_____ program participation/ fidelity (78)
_____ research methods (79)
_____ child skills testing (80)
_____ social class differences/poverty and disadvantage (81)
_____ social workers/case managers (82)
_____ sustainability of program outcomes after intervention (83)
_____ teacher-based evaluations (84)
_____ ECEC professional/paraprofessional training (85)
_____ other themes (86)

Page 2: Open Responses
Q19 Please briefly summarize the research, methods, and findings. Specific relevance of this study to HIPPY should be emphasized.

Answer Long Form

Q20 What are the most positive outcomes of this research? <There is a word limit of 500 characters. Please keep your response within about two sentences.>

Answer Long Form

Q21 What are some of the gaps in the research and future investigations that you would recommend to support this research?

Q22 Is there an internet url where we can locate this research? (Please enter just one url here. If you would like to share additional urls, please do so in the other comments box below.)

Q23 Is there an abstract available for this study? If so, please paste it here.

Q24 Are there any other comments that you wish to provide? (These comments will not be shared online.)

Q25 Do you have any graphs, pictures, or other documents that you would like to upload? (UPLOAD SERVICE WILL BE MADE AVAILABLE ON THE FUTURE 2.0 WEBSITE)

Contact Information

Q26 Please provide your name and email. This information will not be shared on the website or with anyone outside of the HIPPY International research team. If you have already filled out your email on a previous form, please just fill in your name.

Name (1)

Email (2)

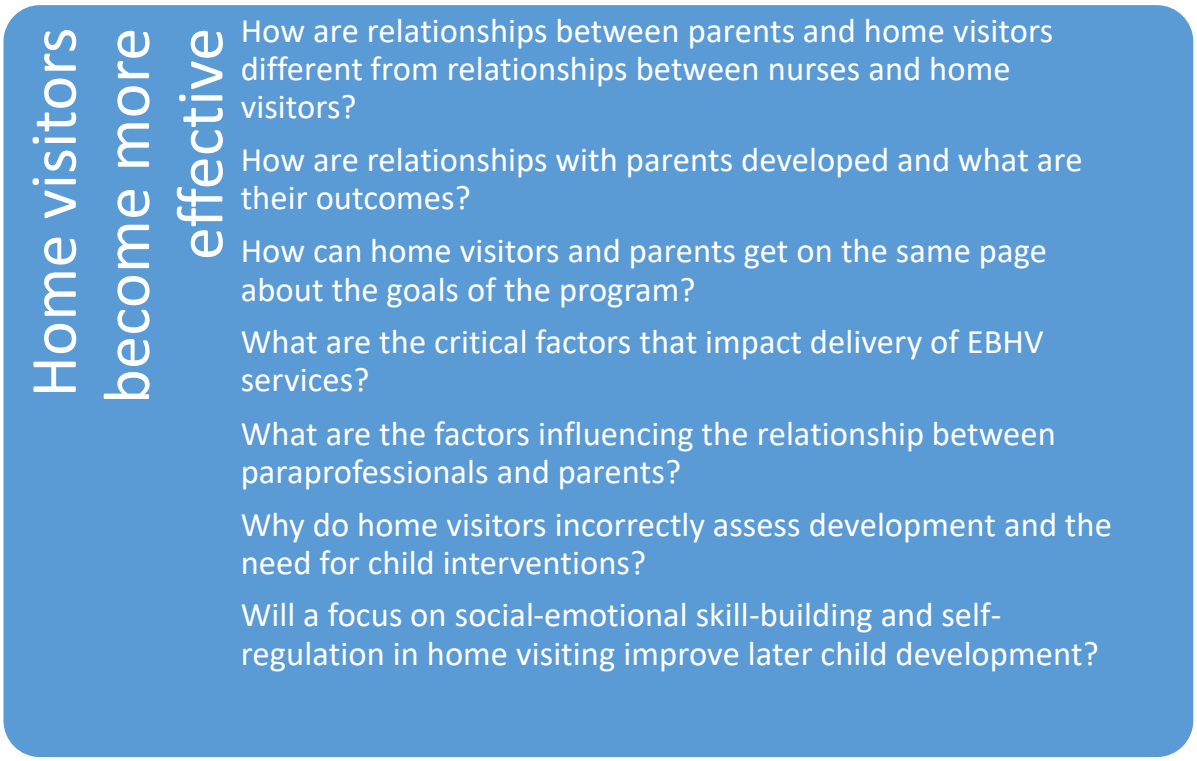
Appendix H: Question-Hypothesis-Impact Findings

Home visiting and/or other interventions is more effective

- Are there more sustainable outcomes from center or home-based education?
- Can universal preschool be implemented?
- Do Children who participate in HIPPY as well as Head Start become more prepared for school than those who participate in Head Start only?
- Does a special intervention program for mothers create more sustainable outcomes whether they take place in combination with home or center based education?
- Does a special intervention program for mothers create more sustainable outcomes?
- How can center-based programs be integrated with home-visiting?
- How can home visiting partner with other forms of intervention to provide more comprehensive assistance?
- How can pediatricians assist children living in poverty?
- How can pediatricians collaborate with home visiting interventions?
- How can the needs of clients and resources available be better coordinated by the health care facility?
- How do early childhood intervention programs compare in terms of cost and impact?
- How do professionals and paraprofessionals communicate?
- How should pediatricians recommend home-visiting?
- Is the effect of HIPPY beyond that of center-based preschool programs?
- Is there an added value of home-visiting to care-based intervention?
- What are shared challenges for medical evaluations and policy implementation?
- What are some examples of interventions that health care professionals can integrate?
- What are the different types of home-visiting interventions?
- What are ways that pediatricians can work with home-visitors?

Home visiting strategies become more effective

- Are paraprofessionals more cost effective?
- Are researchers' assumptions accurate according to home visitors?
- Are there variances based on age, gender, and other demographic variables of the child for mother intervention?
- Does an alternative curriculum of home instruction work better?
- Does inclusion of a family support specialist help?
- Does the degree of implementation increase effectiveness?
- Does the duration or intensity of participation of parents have an impact?
- How can HIPPY work around non-HIPPY related problems the families have?
- How can home-based intervention be improved?
- How does communication and rapport with parents influence program delivery?
- How does research support Early Childhood Intervention?
- What are features of more effective programs?
- What are the different types of home visiting models?
- What are the different types of outcomes that different home visiting models attempt to achieve?
- What impact does HIPPY have on home visitors?
- What is the future of home visiting?
- What is the value of ECEC for the economy?
- Which intervention programs are more and less efficient at achieving cost-efficient outcomes?
- Will home intervention participants outperform those who receive a DIY packet?


Home visitors become more effective
How are relationships between parents and home visitors different from relationships between nurses and home visitors?
How are relationships with parents developed and what are their outcomes?
How can home visitors and parents get on the same page about the goals of the program?
What are the critical factors that impact delivery of EBHV services?
What are the factors influencing the relationship between paraprofessionals and parents?
Why do home visitors incorrectly assess development and the need for child interventions?
Will a focus on social-emotional skill-building and self-regulation in home visiting improve later child development?

Innovations to evaluation tools make them more effective

- Does the FMI facilitate parent interaction in EBHV settings?
- How should we measure school readiness?
- How can evaluations be more expansive?
- How can evidence-based research become operationalized?
- How can qualitative and quantitative data be combined for evaluation research?
- How can the non-profit research be applied in practice?
- How do you measure parent engagement?
- How does HIPPY address and gather evidence about school readiness?
- How has the National Research and Evaluation Center measured HIPPY USA parental outcomes?
- How have programs been evaluated?
- How is research patterned after the HIPPY model?
- How should donors conduct a comparative analysis of numerous intervention programs?
- How should one conduct direct assessment of children?
- How should one conduct direct assessment of parents?
- How to choose assessment measures?
- How to develop a national and international research strategy?
- How to incorporate a trainer in the use of educational tablet applications with children?
- Is school readiness a continuous or nominal variable?
- What are common criteria for assessing evidence-based home visiting (EBHV) programs?
- What are other legitimate forms of evaluation?
- What are the different assessment measures used to evaluate HIPPY?
- What are the problems with randomized control trials?
- What are the purposes of assessment?
- What is Evidence Based Practice?
- What types of questions are best suited to ask small children about their preferences and opinions?
- Would a tool such as the FMI assist EBHV programs conduct evaluations?


Parents develop a more positive influence on their children
Are home environment and parent efficacy predictors of school achievement?
Are there differences between parents who participate in HIPPY and those who don't?
Do HIPPY parents become more involved in the school and community?
Do parents have increased success as a result of participation in the program?
Does HIPPY improve in-home literacy?
Does mother intervention training increase attainment of the child?
Does mother-child interaction improve child's achievement?
Does mother-child interaction mediate the effect of intervention on child's achievement?
Does the psychological well-being of the parent affect the home environment and child achievement?
How can early childhood programs facilitate parental engagement?
How can HIPPY improve marital relationships?
How do marital relationships and marital conflict influence the parent-child relationship?
How effective is HIPPY at improving the parent-child relationship and well-being of each?
How effective is HIPPY at improving the parent-home visitor relationship and well-being of each?
How often and in what capacity parents are involved with their children at home?
Is parent literacy teaching more effective than just storybook reading?
Is the Etgar program providing support for mothers?
What elements of a marital relationship impact the parent-child relationship more?
What is parent engagement?
What is the relation between parent literacy teaching and child literacy?
What is the relation between parent-child reading and child literacy?


Program adapts to community needs
Can gaps between more and less advantaged children be decreased with interventions?
Can HIPPY be adapted to aboriginal culture?
Does HIPPY have an impact on parents and community belonging?
Does HIPPY meet the needs of the community?
How can education be used to increase the opportunities of disadvantaged populations?
How can home visiting by customized to meet the needs of a specific family or community?
How can outcome gaps of the aboriginal community be reduced?
How do HIPPY participants compare with families from the general population with similar characteristics?
How do states differ in implementing home visiting?
How does SES and other background mediate the relationship between parent-child learning and literacy?
How does the HIPPY program work in Arabic speaking communities?
How is HIPPY being implemented within aboriginal communities?
How should money be spent to assist the welfare of aboriginal communities?
Is HIPPY appropriate for aboriginal communities?
What are the agencies that provide services for aboriginal communities?
What are the challenges facing aboriginal communities?
What are the disadvantages faced by teenage mothers?
What are the distinct family values of the Latino population?
What are the special needs of immigrants in Europe?
What are the special needs of teenage mothers?
Which groups does home-visiting benefit most?
Can gaps between races be decreased with interventions?
Are there differences in attainment for immigrants from Turkey and Morocco?
Are there differences in the effectiveness of HIPPY for teenage mothers over non-teenage mothers?
For which communities is HIPPY most appropriate?
How can structures and processes of child care meet the needs of impoverished families?
How wide are gaps between more and less advantaged children?
What are the long-term effects of the HIPPY program specifically for Spanish-speaking families?
What are the special needs of the Roma population in Europe?
What recommendations do researchers have about home visiting interventions with higher risk families?
What types of materials should be developed for the Latino population in the USA?


Program administration becomes more effective
How is Evidence Based Practice established in ECI?
What evidence and answers do HIPPY research studies need to convince local agencies to adopt it?
Do home visiting programs that receive federal funding conduct evidence based research required for this funding?
Does the theory of change held by the organization match the theory of change that the parents have?
How can interventions be managed with limited resources?
How can NPOs become more accountable to donors?
How do parents and home visitors view the goals and processes of the program to be similar and different?
How does participation in the program change over time?
How efficient is the investment made in HIPPY at achieving beneficial outcomes?
How has many been spent to assist the welfare of aboriginal communities?
How have home visiting models been implemented by state?
How is ECEC funded?
How is funding bundled for home visiting?
How should government spend money on intervention programs?
Is the Etgar program functioning as expected?
Is the HIPPY program cost effective?
Is the program being delivered effectively, implemented according to plan?
What are the changes in government policy that have affected ECEC?
What are the costs and benefits in monetary scales of intervention programs?
What are the federally funded ECEC programs?
What are the policy decisions that were recommended to improve ECEC?
What are the strengths of the program?
What criteria was used to endorse HIPPY as an evidence based home visiting model?
What evidence is needed to gain funding?
What government policy decisions have been made about home visiting?
What is the HIPPY model?
What is the return on investment for early childhood education and interventions?
What is the theory of change behind home visiting interventions?
What types of research do non-profits conduct to benefit youth?
Whether HIPPY has achieved its goals?
Whether HIPPY has been adapted to Australia?


Program outcomes are sustainable
Do HIPPY children behave better when they are in school?
Do HIPPY children have higher school enrollment and attendance?
Do HIPPY students have increased math and reading achievement scores?
Do kindergarten teachers rank HIPPY students as having better classroom behavior?
Do teachers find that the HIPPY children are more prepared and the parents more involved?
Does HIPPY create sustainable improvement that can be seen in later grade levels?
Does HIPPY have a greater impact than center-based preschool education?
Does HIPPY have a sustained impact on late elementary school education?
Does HIPPY have sustainable results at later stages of the child's life?
Does HIPPY improve later school achievement?
Does HIPPY improve later school attendance?
Does HIPPY improve later school behavior?
Does HIPPY improve school involvement?
Does intervention yield long-term benefits?
Does mother intervention training increase attainment of the child over time?
Does participation in HIPPY impact cognitive skills, standardized achievement, and adaptation to the classroom?
Does significant scientific evidence exist about the effectiveness of the home visiting program?
Does sustained mother intervention training increase attainment of the child over time?
How do former HIPPY students compare with other low SES students?
Is the language proficiency of HIPPY students better than other students?
What are proven strategies of childhood intervention?
What are the financial benefits of investing in early childhood education and interventions?
What are the later economic benefits of interventions?
What impact does a home visiting intervention have on kindergarten outcomes?

Other

- What does Early Childhood Intervention currently look like in the US?
- Can HIPPY outcomes be replicated?
- How do childrens' opinions influence skills?
- How do non-profit researchers operate differently in different settings?
- How do teachers perceive school readiness?
- How is non-profit research respected and valuable?
- How should parent education programs be implemented?
- How should we determine successful intervention?
- How to incorporate a parent in the use of educational tablet applications with children?
- Is the Etgar program providing support for their children?
- What are some of the problems and solutions of home-based intervention implementations?
- What are the challenges to show a program is effective?
- What are the different problems and resources for HIPPY families?
- What are the essentials of school readiness?
- What are the generalizations that can be made about home-visiting interventions?
- What are the origins and goals of HIPPY in Australia?
- What are the published studies about HIPPY?
- What are the recommendations from the vast collection of evidenced based research?
- What are the themes of HIPPY research?
- What is school readiness?
- What is the lifecycle of an intervention?
- What is the valor of research that investigates home visiting?
- When is a child ready for school?
- Who has conducted research on HIPPY in Australia?

Appendix I: Hypothesis-Impact Findings

Homea visiting and/or other interventions is more effective

Authors make a concerted effort to recommend home visiting interventions to health care centers as an economically efficient way of assisting at-risk families. (Beck et. al)

Head Start and HIPPY" group scored "developed" on all sections of Texas Primary Reading Inventory, while the Head Start only group did not have unanimous developed achievement. The results provide a framework for promoting collaboration between the two programs. (Amber L Brown and Joohi Lee)

Home visiting that promotes socio-emotional competency and adaptive learning behaviors was shown in a randomized evaluation to have an added effect on center-based intervention. (Karen L. Bierman, Janet A. Welsh, Brenda S. Heinrichs, Robert L. Nix, Erin T. Mathis)

They indicate that home-visiting has tremendous potential for working with the health community, and they are extremely supportive of both collaboration in the implementation and evaluation of interventions. (Council on Community Pediatrics)

Home visiting strategies become more effective

Training and retreats had a large effect on locals "taking ownership" of HIPPY. (Beatch, Michelle and Le Mare, Lucy)

HIPPY was one of the 12 programs out of 32 that was recognized as being an evidence-based early childhood home visiting model according to DHHS criteria. HIPPY showed favorable effects on vocabulary, classroom adaptation and academic self-image. (Sarah A. Avellar and Lauren H. Supplee)

Results indicate that participation in the program has positive results on not only the children, but also parents who became more active in other parts of their life, such as becoming citizens of Canada. (Prairie Research Associates)

The authors show the benefits of private investment in ECEC and the types of research that are needed to report an impact. The benefits of ECEC are shown to be cost-effective, especially when programs target their audience and follow through with evidence-based outcome achievements. (Karoly, Lynn A)

The most cost effective intervention programs are recognized, and a method for evaluating interventions is developed and tested. HIPPY is recognized as a cost effective intervention program with valid scientific research that government should invest in. (Steve Aos, Roxanne Lieb, Jim Mayfield, Marna Miller, Annie Pennucci.)

Home visitors become more effective

The authors examine qualitatively in depth how the relationship and rapporteur established with parents is important for the success of the program. By identifying a lifecycle of the program, the authors have provided a framework for training exercises that will recognize the importance of developing, maintaining, and terminating the relationship at different phases of the program. (Maureen Heaman, Karen Chalmers, Roberta Woodgate, Judy Brown)

The FMI is shown to be a tool that can help home visitors work with families and recognized their needs. (Angela Kyzer; Leanne Whiteside-Mansell; Lorraine McKelvey; Taren Swindle)

They provide a theory for why program goals are not realized and explain it with a very detailed qualitative analysis. The study provides new foundations to not only change the way parents are instructed about interventions but it also shows how qualitative studies can identify problems and solutions that quantitative research cannot. (Kathleen M. Hebbeler and Suzanne G. Gerlach-Downie)

Innovations to evaluation tools make them more effective

A tool for measuring school readiness was developed and tested, which can both help teachers decide if further intervention is necessary and provide guidance for HIPPY trainers on how to help parents understand the knowledge progression that leads to school preparation. Also, it showed that HIPPY is working, as the HIPPY kids were more prepared for school. (Gumpel, Tom)

Perhaps the most positive outcome is the authors' presentation of the parent engagement evaluation instruments, and their description of the measurement scales that each used. (Kirsten Ellingsen and Lowell Myers)

The presentation provides a good outline of the instruments that have been used to evaluate HIPPY and ways for researchers to continue to assess children and parents. (Kirsten M. Ellingsen and Marsha M. Black)

Parents develop a more positive influence on their children

HIPPY is shown to provide additional social support that helps parents support their child's developmental needs and improve their marital relations. (Marisa J. Flores)

Indicates that preschool literacy teaching by parents is more important than just storybook reading. (Hood, M., Conlon, E., & Andrews, G.)

Mothers who had been participating in the program longer were more involved in their children's education. (Ursula Y. Johnson, Veronica Martinez-Cantu, Arminta L. Jacobson & Carla-Marie Weir)

The results showed that the program effect was mediated by improved mother-child interaction. Mothers participating in the program who provided more social-emotional support increase vocabulary and math skills. Furthermore, the program improved the mother-child relationship. (Cathy van Tuijl and Paul P.M. Leseman)

Program adapts to community needs

Aboriginal communities adapted the program to their own cultural values for raising children. Respondents initially found HIPPY beneficial for school readiness but shifted their emphasis to cultural awareness and a greater sense of cultural identity. Training and retreats had a large effect on locals "taking ownership" of HIPPY. / (Beatch, Michelle and Le Mare, Lucy)

Different educational tools are needed to assist the Moroccan families, who were active participants in the program and chose to utilize the Dutch language. The lack of a significant improvement for this group may actually represent a positive outcome of the research. (Van Tuijl, C., Leseman, P. M., & Rispens, J.)

Document provides a focus on how HIPPY can be modeled to assist migrant families in Europe with young children, which is a growing concern after recent refugee waves. (JÚLIA SZALAI, MARCUS CARSON, ZUZANA KUSÁ , ENIKŐ MAGYARI-VINCZE AND VIOLA ZENTAI)

Teenage mothers who participate in HIPPY are able to produce children who do not remain at a disadvantage. (Amber L Brown)

The document outlines the exact amount that is spent on each agency and provides five clear policy recommendations to improve the welfare of aboriginal communities. (Turpel-Lafond, Mary Ellen)

This study is important, because there is a higher proportion of lower socio-economic Latino families in the USA, and hence is an important demographic group for HIPPY which seeks to provide intervention for lower socio-economic families. The tailor made program that is culturally relevant for Spanish families is also a positive outcome in itself, utilizing locally based paraprofessionals with knowledge of indigenous culture. It is unique in that it also examines psychological factors, such as stress and depression. / / (Nievar, A. M., Jacobson, A., Chen, Q., Johnson, U., & Dier, S.)

Program administration becomes more effective

HIPPY is recognized officially as an effective model that received and should continue to receive funding and expansion. (Emilie Stoltzfus and Karen E. Lynch)

HIPPY stands out as a program that is seeking to conduct meaningful evaluations of its research and reform as necessary to improve. (Miriam Wasserman)

HIPPY was one of the 12 programs out of 32 that was recognized as being an evidence-based early childhood home visiting model according to DHHS criteria. HIPPY showed favorable effects on vocabulary, classroom adaptation and academic self-image. (Sarah A. Avellar and Lauren H. Supplee)

Prior research from Victoria University testifies to the effectiveness of HIPPY and its adaptations in Australia. (e.g. Doutch, M. 2007; Gilley, T. 2002; Godfrey, C. 2006 ; Grady, J. 2002; McDonald 2004, Mousa 2000, Nolan, L. 2005, and Yurdukal, 2007) (Suzanne Dean and Cynthia Leung)

The most cost effective intervention programs are recognized, and a method for evaluating interventions is developed and tested. HIPPY is recognized as a cost effective intervention program with valid scientific research that government should invest in. (Steve Aos, Roxanne Lieb, Jim Mayfield, Marna Miller, Annie Pennucci.)

They outline the following evidence that donors would need to support HIPPY: "School readiness, Early literacy, Family strengthening & stability, Longitudinal data/school success, STEM, Maternal/child health" (Kirsten Ellingsen and Paul J. Wirtz)

This presentation provides researchers with a useful rubric towards meeting the needs of donors and creating evidence based program improvements. (Kirsten M. Ellingsen)

Program outcomes are sustainable

Cohort 1 was a great success. The reasons that Cohort 2 could not be replicated also open up an opportunity for researchers to investigate why the program is not always able to create a positive outcome. The authors recommend looking at long-term effects of participation, mediating effects, and examining intensity, things which have been done in numerous studies since. (Baker, A. J. L., Piotrkowski, C. S., & Brooks-Gunn, J.)

Grade retention rates became more significant as the students got older, indicating that the program becomes more effective over time. (Brown, A. L.)

HIPPY children tended to outscore other preschool students and no preschool program students. The results also show that HIPPY had an effect on behavioral outcomes that were not intended to be program outcomes. Authors make recognition of parental motivation that many studies ignore. (Robert H. Bradley & Barbara Gilkey)

Study shows the sustained benefits of training for mothers from low-income backgrounds. Ongoing training was provided to a random selected group of mothers, and their children for the most part were better off as a result 19 years later. (Kagitcibasi, C.,Sunar, D.,Bekman, S.,Baydar, N., & Cemalcilar, Z.)

The HIPPY program did increase school outcomes during later years, and these results were sustained up to the 3rd grade. Furthermore, mothers who had been participating in the program longer were more involved in their children's education. (Ursula Y. Johnson, Veronica Martinez-Cantu, Arminta L. Jacobson & Carla-Marie Weir)